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SIGILLVM ACADEMIÆ HARVARDIANÆ IN NOV: ANG:
CHRISTO ET ECCLESIÆ

THE GIFT OF

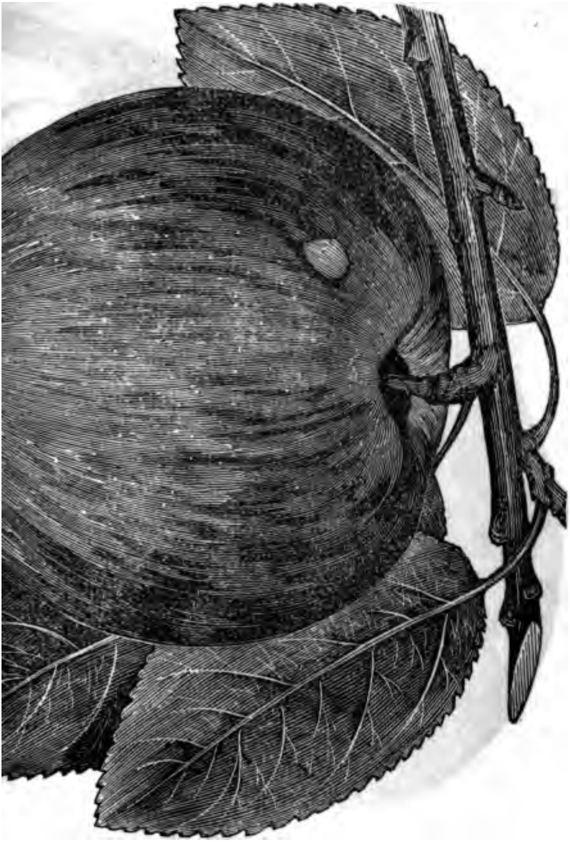
JAMES WALKER,

(Class of 1814,)

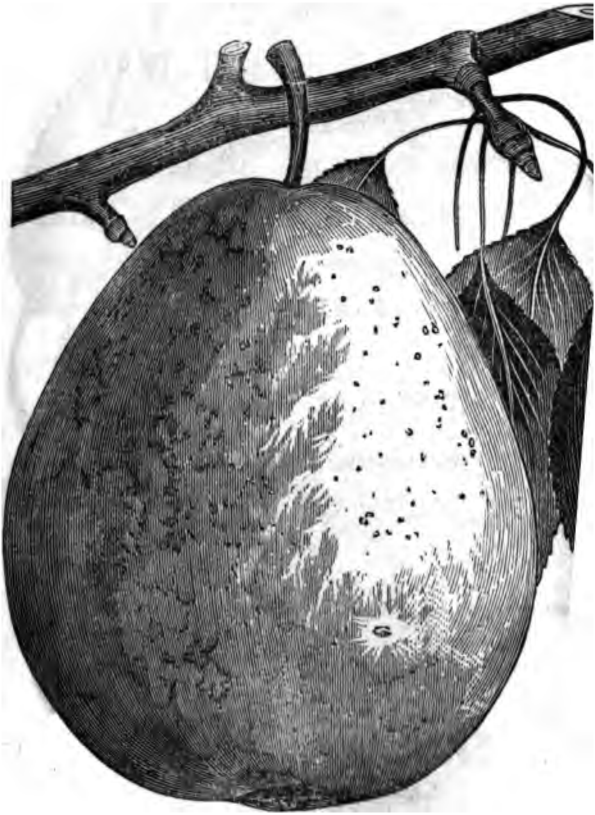
LATELY PRESIDENT OF

HARVARD COLLEGE.

Received 31 Jan. 1860.



HUBBARDSTON NONSUCH APPLE.



FLEMISH BEAUTY PEAR.

A BOOK FOR EVERY BODY.

---

THE

# AMERICAN FRUIT BOOK;

CONTAINING DIRECTIONS FOR

RAISING, PROPAGATING, AND MANAGING

FRUIT TREES, SHRUBS, AND PLANTS;

WITH A DESCRIPTION OF THE

BEST VARIETIES OF FRUIT,

INCLUDING

EW AND VALUABLE KINDS;

EMBELLISHED AND ILLUSTRATED

NUMEROUS ENGRAVINGS OF FRUITS, TREES, INSECTS,
GRAFTING, BUDDING, TRAINING, &c., &c.

---

BY S. W. COLE,

OF THE NEW ENGLAND FARMER, LATE EDITOR OF THE BOSTON
ULTIVATOR, AUTHOR OF THE AMERICAN VETERINARIAN, AND
FORMERLY EDITOR OF THE YANKEE FARMER, AND
FARMER'S JOURNAL.

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FEB 21 1911

Mr. Ernst, of Cincinnati, O., has politely furnished, for this work, a list of fruits adapted to that section.

Mr. Elliott, of Cleveland, O., has furnished a list adapted to that region, selected for this work, by Prof. Kirtland and himself; for which we are under great obligations. When their opinions vary, the preference of each is indicated by his initial.

The above are two distant and prominent sections in the West.

We copy the list of Mr. Barry, of Rochester, N. Y., from the Genesee Farmer.

The Engravings in this work have been done by Mr. S. E. Brown, a skilful artist.

We have occasionally made remarks on the hardiness of fruits in Maine, as we have a specimen orchard there, where we try many varieties.

The outlines of apples and of pears contain the name within them, excepting when two outlines are connected, and then they are marked in the outline, or pointed out in the context. The outlines of cherries include numbers, correspondent with the number of the fruit they represent.

---

Stereotyped by
GEORGE A. CURTIS;
NEW ENGLAND TYPE AND STEREOTYPE FOUNDERY,
BOSTON.

# PREFACE.

In our early childhood, we joyfully feasted on fruits, both wild and cultivated, and from that time we have regarded them as "pleasant to the sight and good for food," ranking among the most delightful and valuable productions of the earth.

In our boyhood, we anxiously watched the early bearing trees, and became familiar with hundreds of varieties of fruits, and could select each from a promiscuous heap, and define its name, character, and location. This early discipline of the mind has been highly advantageous; and the love of fruits, and a pleasure in their cultivation, have

> "Grown with our growth and strengthened with our strength;"

and the subject never tires, as it is rich in variety, vast in extent, and every season brings something fresh and interesting, as new fruits are continually springing into existence.

We have long conducted journals in which fruits have been a conspicuous subject, and this has opened a wide acquaintance, and an extensive correspondence and interchange, with numerous fruit growers, in different parts of the country; and our observations, when visiting orchards and fruit gardens, have afforded us peculiar advantages, in seeing trees in various locations, and under different management. We have, also, constantly inspected one of the largest markets, in a region of the greatest variety and extent of fruit culture — a wide field of experiments on natives and exotics — and, owing to varying seasons, and precarious crops, inviting productions from all parts of the country.

The exhibitions of the Massachusetts Horticultural Society, one of the most enlightened and efficient associations in the world, we have long examined; and we gratefully acknowledge the politeness of officers and members of this association, for numerous favors. By the perusal of the various agricultural and horticultural journals, we have been apprised of all new and excellent fruits produced in different sections, and the prevalent opinions concerning them.

These advantages, with diligence and zeal in turning them to account, with our own practice from early life, in the pleasant pursuit of growing fruits, and in raising and managing trees in the nursery and orchard, may justify us in offering this work, as the result of long experience and extensive observation, combined with the opinions of a great many of the most intelligent fruit growers, and able pomologists, in the country.

Our object has been, to furnish a book adapted to the wants, and within the means, of every family in the country — emphatically a work for the MILLION—containing all the practical information necessary for the production and successful management of trees, and the selection of the best varieties of fruit, in order to excite greater attention, both in cultivator and consumer, in raising more and superior fruits, and in their extensive use as wholesome food, an improving ingredient in various culinary preparations, and not only a harmless, but a healthful luxury. It will be found valuable in the family, as a branch of science, far more useful than subjects that are foreign to the practical purposes of life.

Nearly every variety of excellent fruit is cultivated in this region. For the peculiar character of new kinds, in distant parts of the country, and some others adapted to particular locations, we rely on judicious cultivators in such sections, and our authorities are often quoted.

This manual has been condensed from a collection of materials sufficient for several volumes, containing the substance of the whole. This has been a more laborious task than the preparation of a voluminous work.

A prominent feature is a preference for native fruits; and we have introduced many new and valuable kinds, a number of which (some of the highest rank) have never been known to the public, excepting by our distributions and notices.

We have endeavored to discriminate between fruits that are excellent, indifferent, and poor. It avails but little, to give hundreds of kinds, all "excellent"—"fine"—"desirable," &c., when not one-fourth are worth cultivating. It leads the inexperienced into a labyrinth of confusion, vexation, and disappointment.

Although this book is of humble pretensions, both in size and *price*, yet, owing to its comprehensive style, and economical arrangement, it contains a large amount of matter, describing the most valuable fruits, with a discriminating view of some of less importance, and a cautionary account of a few that have acquired a name beyond their merits.

A work of this character is very liable to criticism, as fruits vary greatly, from climate, season, location, soil, management, and various incidents; tastes, also, vary materially. We give general characteristics and habits, aware that there are many exceptions.

We shall be happy to receive opinions on any subject in this work, confirmatory or exceptive. Also, specimens of fruits, scions, &c., of new and decidedly superior varieties, from any section of this country, or from more distant regions, will be very acceptable, and duly acknowledged.

S. W. COLE.

*Chelsea and (Quincy Hall) Boston.*

# ACKNOWLEDGMENTS.

We have, at various periods of our life, received instruction from numerous works, domestic and foreign, on the subjects embraced in this work; but in its immediate preparation, we have depended — next to our own experience and observation — mostly on the intelligent cultivator and able pomologist of the present time, and on recent works of the highest authority, a few of which we name: —

Fruit and Fruit Trees of America, by A. J. Downing, Newburg, N. Y.

The Grape, by J. F. Allen, Salem, Ms.

Magazine of Horticulture, (monthly,) by C. M. Hovey, Cambridge, Ms.

Horticulturist, (monthly,) by A. J. Downing.

Insects Injurious to Vegetation, by Dr. T. W. Harris, Cambridge, Ms.

New England Fruit Book, by the late Robert Manning, revised by John M. Ives.

Fruits of America, (bi-monthly,) colored engravings, by C. M. Hovey.

Family Kitchen Garden, by Robert Buist, Philadelphia, Pa.

Western Farmer and Gardener, formerly by Rev. H. W. Beecher.

Albany Cultivator, Horticultural Department,by J. J. Thomas.

American Agriculturist, by A. B. Allen.

Genesee Farmer, Horticultural Department, by P. Barry.

Ohio Cultivator, by T. M. Bateham.

Report of the Ohio Fruit Convention, prepared by F. R. Elliott.

Prairie Farmer, Ill., by J. S. Wright, and J. A. Wight.

New England Farmer, Old Series.

Boston Cultivator.

Massachusetts Ploughman, by Wm. Buckminster.

Farmer's Monthly Visitor, by ex-Governor Hill.

Maine Farmer, by Dr. Holmes.

Michigan Farmer, by Rev. W. Isham.

Besides the above, we have added to our means and sources of information, by access to all the agricultural and horticultural journals throughout the country, as well as many which are published abroad, including various books which have appeared since the present era of agricultural and horticultural improvement.

We are indebted to numerous fruit-growers, and nurserymen, for various favors, such as specimens of fruit, scions, trees, vines, plants, &c.; for the communication of facts and opinions, personally, by correspondence, or through the public journals; and to many whom we have visited, for an exhibition of their orchards and fruit gardens, and for the detailed accounts of their experiments and observations with which they have kindly favored us.

To have inserted the names of the numerous class above named, together with such compliments as they deserved for their generosity, their skill and interest, in this noble science, would have required an amount of room, which, though certainly well employed, would not, perhaps, have been so useful to the general reader, as the matter which, thereby, must have been excluded.

We give a few names, mostly as a matter of economy as to room, saving us, through the work, frequent repetitions of the whole address. This we have done, generally, without permission; but we would simply remark, that no gentleman is responsible for any views which we have expressed; as, in his particular location, as well as from other varying circumstances, he may have found different results from those which we have given.

Allen, J. F., Salem, Ms.
Barker, Dr. S. A., McConnelsville, O.
Barry, P., Rochester, N. Y.
Beecher, Rev. H. W., Brooklyn, N. Y., late of Indiana.
Buist, Robert, Philadelphia, Pa.
Brinckle, Dr. W. D., " "
Byram, H. P., Bradensburg, Ky.
Cabot, Joseph S., Salem, Ms.
Colton, Samuel, Worcester, Ms.
Darling, N., New Haven, Ct.
Downing, A. J., Newburg, N. Y.
Downing, C., " " "
Dodge, A. W., Hamilton, Ms.
Eaton, L. C., Providence, R. I.
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Elliott, F. R., Cleveland, O.
Ernst, A. H., Cincinnati, O.
Fowler, S. P., Danvers, Ms.
French, B. V., Braintree, Ms.
Goodale, Stephen L., Saco, Me.
Haggerston, David, late farmer and gardener to J. P. Cushing, Esq., Watertown.
Harkness, Edsom, Peoria, Ill.
Hall, Moses, Portland, Me.
Harris, Dr. T. W., Cambridge, Ms.
Hodge, Benj., Buffalo, N. Y.
Holmes, Dr. E., Winthrop, Me.
Hovey, C. M., Cambridge.
[illegible]use, T. S., Coshoc-
[illegible]
Ives, J. M., Salem, Ms.
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Kittredge, Dr. Rufus, Portsmouth, N. H.
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Newhall, Cheever, Dorchester, Ms.
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Wilder, M. P., Dorchester, Ms.
Weller, Dr. Sidney, Brinckneyville, N. C.
Williams & Son, A. D., and A. D. Jr., Roxbury, Ms.

# INTRODUCTION, OR EXPLANATORY.

Fruits are generally described in familiar language; a few technical terms, only, are used.

The position of fruits, as represented by engravings, is stem upward, as it usually hangs on the tree; yet, in description, the stem end is called the base or bottom, as it is next to the branch or tree, and the blossom end is called the top, summit, crown, apex, or eye.

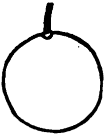
Sizes are expressed by comparative terms; as, extremely large — very large — large — rather, or tolerably large — large medial — medial — small medial — rather small — small — very small — extremely small. These form a gradation of sizes.

Forms of fruit are multifarious, varying, all the way, from one extreme to another. The following figures and remarks will aid the inexperienced.

*Round.* This simple form is most common to fruits, and other substances. It is the basis on which other forms are calculated. Figure 1. Black Hamburgh Grape. Slight deviations are *Roundish*, as the peach on page 178.

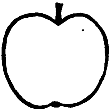
*Appleform* is the most common modification of the circle. The base or stem end is the larger. Fig. 2. Baldwin Apple.

Fig. 1.



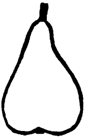
*Round.*

Fig. 2.



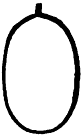
*Appleform.*

Fig. 3.



*Pearform.*

Fig. 4.



*Oval.*

*Pearform, or Pyriform,* is the reverse of appleform, as the base is the smaller. Fig. 3. Andrews Pear. Pears generally taper more to the small end than apples.

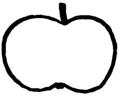
*All other Forms* are modifications of these three leading forms.

*Oval,* the circle modified or elongated lengthwise. Fig. 4. Smith's Orleans Plum; White Muscat Grape.

*Flat,* the circle elongated crosswise. Fig. 5. Briggs's Auburn Apple, Rambo Apple.

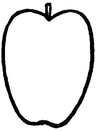
*Oblong,* the height greater than the diameter. Fig. 6. Porter Apple; Coe's Golden Drop Plum; Portugal Quince.

Fig. 5.



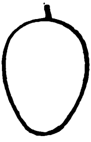
*Flat.*

Fig. 6.



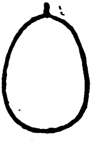
*Oblong.*

Fig. 7.



*Ovate*

Fig. 8.



*Obovate.*

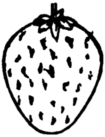
*Ovate*, the form of an egg; the base the larger end. Fig. 7. Williams Apple; High Bush Blackberry is long-ovate.

*Obovate*, ovate form reversed. Fig. 8. Osborn's Summer Pear; Blue Imperatrice Plum; Cranberry, page 279.

*Conical*, tapering much, and straightly, or nearly so, to the top or calyx. Fig. 9. Burr's New Pine Strawberry.

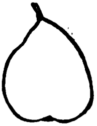
*Turbinate*, top-shaped. Fig. 10. Dearborn's Seedling Pear.

Fig. 9.



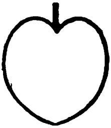
*Conical.*

Fig. 10.



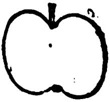
*Turbinate.*

Fig. 11.



*Heart-shaped.*

Fig. 12.



*Angular.*

*Heart-shaped*, shape of a heart. A form peculiar to cherries. Fig. 11. Elton Cherry.

*Angular*, elongated diagonally, one side the lower, the other the higher. Fig. 12. Newtown Pippin,

A combination or modification of these forms, is expressed by a combination of these and various other terms; as, roundish-flat, flattish-round, flattish-conical, roundish-conical, oblong-conical, roundish-ovate, oblong-ovate, obtuse-pyriform, acute-pyriform, obovate-pyriform, turbinate-pyriform, roundish-pyriform, flattish-roundish-conical, roundish-acute-pyriform, obtuse-heart-shaped, acute-heart-shaped, roundish-heart-shaped, &c., &c.

*Calville-shaped*, prominently ribbed and irregular.

*Ribbed*, having moderate protuberances on the sides.

*Undulating* or *Waved*, having very gentle swellings on the sides, or in the cavity or basin.

Colors of fruit are described in terms so familiar, that they need no explanation. They should represent the fruit as it appears when ripe or perfect for use.

The Stem is also called stalk, and the hollow in which it is set is called

Cavity, which is of various forms.

THE CALYX is the remains of the blossom, and the parts of it are called segments. The calyx is generally in a depression or

BASIN, which is of various shapes, and is smooth, waved, furrowed, plaited, or notched.

SUTURE is a hollow or furrow on stone fruit, extending lengthwise round, nearly round, mostly round, half round, or partially round it. It is peculiar to peaches and plums.

THE TIME OF RIPENING, in this work, refers to the latitude of Ms., or this region, which is nearly the same as Central and Western N. Y., Mich., and Iowa. In the Southern parts of Me., N. H., and Vt., fruit ripens 10 or 12 days later; in the Northern parts of those States, 3 or 4 weeks later. In the Southern parts of Ct. and N. Y., and Northern parts of N. J., Pa., O., Ill:, Ind., &c., about 2 weeks earlier. In Southern N. J., Pa., and Central O., Ind., Ill., and Northern Mo., 3 or 4 weeks earlier. The time is a little earlier in the same latitude Westward. Location has great effect. (Page 61.) The time of fruits, of other sections, has been estimated by comparison with well known kinds. Mostly, time is given from our observation for several years.

TABLES OF FRUIT, pages 137, 175, 200, 220, 238. Common type, dessert fruit, as Williams apple. Italics, cooking, as *St. Lawrence*. Part in each type, for both purposes; and best for that indicated by the first type, as Found*ling*, best for the dessert; *Riv*er, best for cooking. In this way, it may be shown that a fruit is almost wholly for one purpose or the other, as Summer Pearm*ain*, mostly for the table; *Red Astrac*han, mostly for the kitchen. Fruits equally good for either purpose, have Italics in the middle, as Col*e's Q*uince, Mon*amet S*weet*ing.

In the column *market*, the fruits are numbered as preferred for market, as 1 the best kind, 2 the next best, &c. The trees are generally vigorous and productive, and the fruit large, fair, of good appearance, or showy, and the quality excellent, or tolerably good.

In the column *Home Use*, the fruits are numbered as preferred for the private garden or home consumption. They are of superior quality, but not always large, nor are the trees always vigorous and productive. Some kinds are good, only as taken from the tree, as the Early Joe apple, and some are too tender to bear transportation to the market, as Fastolff Raspberry, Coolidge Peach, and many others.

In numbering fruits, both for *market* and for *home*, care has been taken to select such as ripen at different periods, so that an assortment will give a succession through the season of that species of fruit. In selecting the best apples and pears for Summer, Fall, and Winter, those for each season are marked distinctly.

The column *Quality*, shows the quality of fruit, on a scale from 1 the very best, to 10 the poorest, and should be read No. 1, 2, 3, &c., not 1st, 2nd, and 3d rate, which is very indefinite, as there is a wide difference between 1st and 2nd rate; and A 1, B 1, A 2, &c., is a confused mode, difficult to understand and apply. The quality is for the purposes indicated by the types, as dessert or cooking, and our mode of expressing it is simple and definite.

Column *Hardiness*, shows this quality in fruit, as to rotting, running from 1, very hardy, to 10, very liable to rot.

As to QUALITY, TASTES vary very much. Many men, and writers on fruit generally, prefer a smart, vinous, or Champagne flavor, such as the Dix and Beurre de Aremberg pears, and some even admire the still more acid Brown Beurre, also white-fleshed vinous-flavored peaches; while some men, and most women and children, the great majority, prefer sweet or mild luscious fruits, such as the Seckel and Winter Nelis pears, yellow-fleshed, sweet, rich peaches. Who shall decide, when Doctors of Pomology would prescribe for those who are *sane*, and need no advice? A taste for acid or smart-flavored fruits is natural with some, and it may be acquired or increased, by the use of stimulants or narcotics.

DESSERT, TABLE, AND EATING, all have the same meaning, and are applied to fine, delicious fruits.

COOKING AND KITCHEN are applied to acid or austere fruits, used for culinary purposes. Sometimes, mild or sweet fruits are used for cooking; as, sweet apples, peaches, plums, &c.

AN AMATEUR is one who generally cultivates for pleasure, and has time and money; and he regards not so much the cost of fruit, or its value in market, as its excellent quality. Sometimes, beauty is an object with him.

MIDDLE REGION is a term that we use for the Middle States, and the same latitude west.

POMOLOGY, the art or science of raising fruits and judging of their qualities. It is becoming a regular, extensive, important, and delightful science, adapted to the *taste* of all.

POMOLOGIST, one interested and skilled in the knowledge of fruits.

PIPPIN is an indefinite term, implying nothing more nor less than apple.

THE NOMENCLATURE of fruits is in a confused state. Some fruits have a great many names; while, in other cases, the same name is applied to many varieties. All cultivators should endeavor to remedy this evil, by learning and abiding by the true standard name. It is acknowledged that the producer of fruit has the best right to name it. If he neglect it, the discoverer of a new kind may name it; and next in order comes the claim of him who introduces it to the public. All uncouth, and very long names should be avoided, as Ramshorns, Hogpen, Back of the Barn Apple, &c. All apples, decidedly sweet, should include in their name the term *Sweet* or *Sweeting*.

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# AMERICAN FRUIT BOOK.

## UTILITY OF FRUITS.

In the whole routine of cultivation — and it is all delightful — there is no department more pleasing or useful than Fruit Growing; and our advantages, in this country, for its production, are varied and extensive. With due attention, we can have a great variety of the most delicious fruits; and the trees, with their beautiful bloom, luxuriant foliage, and rich and gorgeous crops, are among the most ornamental scenery.

Good fruit is a great luxury, in which we may freely indulge, not only with impunity, but with advantage as to health as well as pleasure. It forms a wholesome sustenance, and lessens the excessive use of various articles of diet, the too free use of which tends to inflammations, fevers, dyspepsia, constipation, apoplexy, gout, jaundice, and a host of other ills. In numerous instances, violent diseases, and almost hopeless cases of chronic complaints, have yielded to the constant use of fruits.

The vast amount of unhealthy meats, from the sudden change of filthy matters to slaughtered animals, and by far a too liberal consumption of those that are good; also of fine flour, and fine hot bread, of butter, cheese, fat, oils, strong tea and coffee, (all injurious in excess,) the high state of cookery; the free use of condiments and seasoning, and various rich dishes, and compounds, commingled, and confused; all call aloud for more fruit to lessen their use, or palliate their effects, and save thoughtless beings from untimely graves, or from lingering out a wretched state of existence. Fruits have a cooling and gently laxative effect, regulating the stomach and bowels, correcting bilious affection, and attenuating and purifying the blood, which is the very life of the whole system.

We have many excellent fruits. How delightful, refreshing, and salutary are strawberries and cream; or delicious cherries, ready to burst with their rich juices; the golden apricot, with its fine flavor; the plum, with its honeyed juice; the splendid peach, with its luscious sweetness; the melting pear, with its rich, sugary, or vinous flavor; the apple, in all its variety and excellence, and multifarious preparations, extending from one end of the year to the other; the rich, luscious grape; and others equally delicious — the currant, raspberry, gooseberry, blackberry, whortleberry, mulberry, and cranberry, and the high-scented quince in its conserved state: all excellent, and conducing largely to health, pleasure, sustenance, and happiness. They add a charm to social life, affording a delightful treat to friends, and to children a constant, harmless feast. As a social entertainment, they serve as a grateful substitute for the once ruinous cup, thus having a powerful moral influence. Every fruit tree is a silent preacher in the cause of temperance, a formidable ally in morality, religion, and philanthropy; for the lusciousness of fruits, and the beauty of their attendant scenery, furnish an Eden, where one may sit under his own vine and fruit trees, with none to molest, and no serpent to beguile; but with an Eve, as God's last, best gift, and perhaps cherubs gamboling in his Elysian grounds, as so many multiplied existences in which he lives and revels amidst the charms of nature and munificence of heaven, in the happy results of his own skill and industry, and faith in Him who gives seed-time and harvest.

Teach children the art and science of horticulture and pomology, and you will improve and exalt them; you will train them up in the way they should go, and spread around home the strongest endearments of social life, to which the memory will cling with the fondest recollection, while "breath they draw;" for though roaming the wide world, amidst the varied charms of nature and art, this faithful monitor reverts to the dearest scenes of childhood and youth, where once were

"My father, my mother,
My sister, my brother,
And dear * * *, more charming than all."

## PROFITS.

Every one who has a spot of land should raise fruits, that he may have them fresh from his trees; for in no way will it yield more profit for one's own use; and where there is a good market, they are profitable for that purpose also. Many object to the long delay of trees in bearing, but skill will remedy this evil.

Set apple and pear trees, and a few cherries and quinces, for large standards, 2 rods apart each way; and between the rows set rows of peaches, plums, cherries, quinces, and pears on quince, alternately or mixed; set some of these also in the rows of apples and standard pears. These, and those in intermediate rows, will generally have their day and disappear before the apples and pears interfere with them. In the rows, between the trees, set currants, raspberries, gooseberries, &c., which will flourish well even when they become partially shaded. Between the rows, set strawberries, and grapes on the borders.

The very next year you will have a full crop of strawberries, a pretty good crop of currants, gooseberries, raspberries, &c.; the next year, a full crop of small berries, and a moderate crop of grapes, peaches, plums, cherries, quinces, pears on the quince; and in a few years, all will come into full bearing, and give an ample reward.

Mr. Moses Jones, of Brookline, in this vicinity, a most skilful cultivator, set 112 apple trees 2 rods apart, and peach trees between, both ways. The eighth year he had 228 barrels of apples, and in a few years from setting the trees, $400 worth of peaches in one year; and the best part of the story is, that large crops of vegetables were raised on the same land, nearly paying for the manure and labor. The tenth year from setting, many of the apple trees produced 4 or 5 barrels each, the land still yielding good crops of vegetables, the peach trees having mostly gone by old age. Mr. J. grafted a tolerably large pear tree to the Bartlett, and the third year it produced $30 worth. See Strawberry, page 261.

Mr. S. Dudley, a very successful cultivator in Roxbury, an adjoining city, sold the crop of currants from ½ of an acre for $108, the next year for $125, and he had good crops for several years. He picked 500 quart boxes from ½ of an acre the next season after setting the bushes in the fall. He had $25 worth of cherries from one Mazzard tree.

We saw, in Natick, Ms., on the banks of the "classic Charles," on the farm of M. Eames, Esq., an apple tree grafted to the Porter when 75 years old; it soon bore, and the seventh year it produced 15 barrels, which sold at $30. The original Hurlbut apple tree produced 40 bushels in one year and 20 the next. The original Bars apple yielded 60 bushels in one year. N. Wyeth, Esq., Cambridge, in this region, had from a Harvard pear tree 9 barrels of fruit, which sold for $45.

A farmer would not plant an orchard, thinking he should not live to eat the fruit; his son had the same views; but the grandson planted for posterity, yet his predecessors shared in the fruit also, for the grandfather drank hogsheads of the cider.

Hovey states that a Dix pear tree, in Cambridge, produced $46 worth of fruit at one crop. We saw in Orange, N. Jersey, 100 bushels of apples on a Harrison tree, which would make 10 barrels of cider, then selling at $10 a barrel in N. York.

Downing says that the original Dubois Early Golden Apricot, produced $45 worth in 1844, $50 in 1845, $90 in 1846. A correspondent of the Horticulturist says that Mr. Hill Pennell, Darby, Pa., has a grape vine that has produced 75 bushels yearly, which sell at $1 a bushel. James Laws, Philadelphia, has a Washington plum that yields 6 bushels a year, that would sell for $60. Judge Linn, Carlisle, Pa., has 2 apricot trees that yielded 5 bushels each, worth $120. Mr. Hugh Hatch, of Camden, N. J., has 4 apple trees that produced 140 bushels, 90 bushels of which sold at $1 each. In 1844, a tree of the Lady Apple, at Fishkill Landing, N. Y., yielded 15 barrels that sold for $45.

We give some extreme cases, and others which common skill may compass. The cultivator will do well with medial success. Yet it is well to have a standard of extraordinary attainment, or the perfection of excellence, as a goal for those who inscribe on their banner "Excelsior."

## SOIL — ITS IMPROVEMENT AND PREPARATION.

Every species of fruit trees, and plants, prefers a peculiar soil, in which it flourishes best, requires less manure and culture, and produces better fruit than in soil less congenial. Yet so different are the various species, that almost every soil, from the peat bog to the sandy plain, is adapted to some kind; and all the intermediate soils, between these wide extremes, are adapted to several species.

Besides the advantages from the different natures of various kinds, almost every one, with good management, will succeed very well in nearly every soil. The cranberry of the peat bog flourishes also in the corn-field. The quince does well in a moist soil, and in a dry, gravelly loam; and the apple, pear, plum, cherry, currant, &c., do well, with good treatment, on soils that vary materially both in moisture and texture. Yet much depends on having a suitable soil, and, if possible, it should be chosen.

Again, fruit trees are further adapted to various situations by varieties of the same species preferring different soils, some growing best in a moist, strong loam, as the Roxbury Russet apple, Dix pear, and most kinds of plums; others doing best on a sandy loam, as the Yellow Bellflower apple, Belle Lucrative pear, Imperial Gage plum, &c. When the tree is not adapted to the soil, the culturist should adapt the soil to the tree. Like the accommodating *Justice*, who would bring the law to the case, when his good friend, the lawyer, could not bring his case to the law.

Improvement of Soils. If fruit trees are to be set on very wet land, it should be thoroughly drained by deep ditches, or by underdraining, in the same manner that it is prepared for good tillage. And if the soil abounds in mud, muck, or clay, gravel, sand or loam should be added to improve its texture, render it more dry and friable, and furnish suitable food for trees, as they will not do well in a purely vegetable mould or clay, inorganic materials being wanted for the composition of wood and fruit, which mud and mould would not supply.

Moist lands, on side hills and elevations, are naturally drained in some measure, so that a tolerable degree of moisture is not only harmless, but beneficial. We have trees flourishing finely on a side hill, even where the land is springy. The greatest danger from extra wetness is on flat land, where stagnant water remains around the roots of trees.

When the land is descending, and but little too wet, it may be drained by ploughing it into broad beds, and leav the dead furrows for drains, which should be ke cleared out. On rather too moist land, set the trees n surface, or on the surface, and cover the roots well wit elly or sandy loam. In all cases of too much wet, add sand, or loam, to improve the texture of the soil, an ble manures, nearly all kinds of which are good, bot ically and mechanically. As wood ashes, plaster, a induce moisture, they should be used sparingly on w

Dry land may be greatly and permanently impro adding peat, mud, muck, clay or marl, or fine loa most every kind of manure is useful, particularl ashes, plaster, common salt, and various other salts. manure, on both wet and dry lands, tends to an equi of moisture. Subsoiling, trench ploughing, deep and deep ploughing, all invite moisture upward, time, and allow roots to penetrate deeply for moistur quent stirring and pulverization of soil, by the pl tivator, harrow, or hoe, have a fine effect in retain the surface the rising moisture for the use of plants. ing is excellent. (Page 50.)

Covering Land all over with straw, sea-weed, and other litter, has a wonderful effect in guarding drought, producing an even temperature, a regular, growth, and good crops, and preventing mildew on and gooseberries, the rising of insects from the grou venting fruit from falling, and saving that which fall

Preparation of Soils. Land should be ploughed, w nured, [see Manure, page 52,] (if not already rich,) a cultivated one season before sowing seeds or settin It is best to plant in potatoes or some other root cro will tend to thorough pulverization and mellownes land should be ploughed deep, and subsoiling woul great improvement, or trench ploughing is still bet saves much digging for the purpose of throwing out t soil on setting the trees.

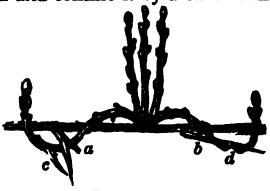
We have used greensward for setting nursery tr raising seedlings. After ploughing and harrowing, rowed, dropped manure and ashes and mixed man and turfs, cut fine, all together, in the row, and then trees and sowed seeds. This was extra labor, but good success, and sold many handsome seedlings fall.

## PROPAGATION.

There are various modes of propagation; some are adapted to one species of trees or plants, and others to others. We shall here give the general modes, and, under each species, show what are applicable to that.

Seeds. The most natural and easiest mode is by seeds, but there are only a few cases, comparatively, in which choice fruits, of the same quality, can be propagated by seed, yet some are raised in this way, and stocks are usually raised from seed,on which desirable kinds are grafted or budded; and by seed new and improved varieties are often obtained. (Page 65.) Under each species of fruit, we give the best way of raising from seed, as the modes are various. Some seeds are injured by drying, others may be kept over to another year, and some require fall planting, or particular preparation for spring.

Layers. Some trees, shrubs, and vines are most easily propagated by layers. Make the earth fine and loose around the plant, prepare a trench a few inches deep, deepest in dry soil, and bend down the branch and confine it by a stick with a shoulder or hook, (*a*,) or by a straight stick run into the earth obliquely, (*b*,) or by first soil and then a stone to keep the layer down. Raising a tongue (*c*) ¼ or ½ the thickness of the layer, or cutting a notch across the layer, (*d*,) will facilitate the production of roots. If it be dry, water occasionally, and better still if litter be applied.



*Layering.*

It is better to make layers in spring, then they will be well rooted by fall; and better still if they be cut from the parent in Aug., if the roots have started. But layers may be made in June or July from the new growth; in this case, the tender roots will be more liable to winter-kill, and should be well covered in litter or loam, or taken up and buried in light soil, as tender trees. (Page 49.)

Cuttings are pieces of young shoots; those of the last year's growth are preferable; the wood should be well ripened, or firm, as that near the end, of late, rapid growth, is too soft and tender to retain vitality and start vigorously. They may be short, containing only one bud, when extensive multiplication is desirable; and in that case, they should be planted horizontally, (as in the figure,) and near the surface, and the ground should be moistened often, or a glass inverted over them; and as growing weather comes on, the earth should be loosened over the bud, to admit air and heat, and promote its growth. Or cuttings may be several feet long, and planted obliquely, when the object is to throw up a strong and powerful shoot. Generally, cuttings are about a foot long. They may be cut at the same time, and saved in the same way as scions. As grape vines bleed when cut in spring, it is best to take off the cuttings in fall, and bury them in light soil, or they may be kept as scions in the cellar.

Cuttings should be planted in a deep, rich, fine, and rather moist soil; or if the soil be dry, litter should be laid around them, and water applied occasionally; and in severe drought, this may be necessary on moist soil. Extra care is economy. Grape and some other cuttings are generally planted obliquely, as shown in the figure, (see also page 240,) excepting single buds, as above. Currants, gooseberries, quince, and some other kinds, are planted perpendicularly, and are usually about one half below the surface.

*Planted obliquely.*

When one has a few choice cuttings, or a kind difficult to start, vegetation is promoted by inverting a bell-glass or tumbler over the bud, as it prevents evaporation, and surrounds the bud with a moist atmosphere.

Cuttings should be planted as early in spring as the land will answer to work. The fall is a favorable season, if done early. If the cuttings be ripe, the best time is the last of Sept. or former part of Oct., for the same reason as for early fall transplanting, (Page 50.) In grapes, &c., cover the bud an inch deep, and let it remain till warm weather in spring; and if it is a region exposed to open winters and sudden changes from heat to cold and the reverse, it may be well to apply litter or other covering to protect the cuttings. A few inches of yellow loam would be good, and by its color it could be removed without injury to the buds. In early fall planting, fibrous roots often start that fall, which is a promise of success. At that season the air is cool, which saves the top from drying, and the earth is warm, which encourages roots. In spring and early summer, the air is dry and the earth cool.

### GRAFTING.

Grafting is transferring a scion, containing one or more buds, into a stock or limb, by which the buds grow and form a tree or top like that of the scion.

THE ADVANTAGES are numerous and important.

1. A valuable kind may be propagated rapidly, a single tree sometimes furnishing scions for 1000 stocks, and so on for a succession of years.

2. Trees of worthless fruit may be changed into the most valuable varieties, and fruit obtained in a few years. (Page 28.)

3. Some kinds of fruit that cannot be easily multiplied by layers or cuttings, nor the same kind by seed, can be increased by this process.

4. Seedlings may be brought into early bearing, by grafting into bearing trees; and some varieties, that are 12 or 15 years in bearing naturally, can be made to bear in a few years by this process.

5. Foreign and other tender kinds may be made more hardy or acclimated by grafting into hardy native stocks.

6. A fruit may be raised on a soil not congenial to it, by grafting into a stock adapted to such soil.

7. By several varieties in the same tree, a succession of fruit may be had in a small garden; and by selecting various beautiful fruits, a tree may be rendered highly ornamental as well as useful.

8. To render trees dwarf by grafting on dwarf stocks, as the pear on the quince, the cherry on the mahaleb stock, &c.

9. To make a good head of an excellent slow-growing variety, which is hard to raise from the ground, by grafting into a vigorous standard large tree.

TIME FOR GRAFTING. We have seen scions growing on a tree set in every month in the year. The usual time is the spring. The best point of time is when the buds are swelling. Stone fruit should be grafted rather early, say before the leaves put out, for they start early, and the scions do not keep well. The bark of the cherry expands and peels, if cut in hot weather, when the tree is growing, and all stone fruit has soft wood that is difficult to split, so that the splitting disturbs the bark when it peels.

The usual time for grafting, in N. England, is from the latter part of March to the last of May. If scions are kept well, they take well in June, but they will not grow so large the first season In the Middle States and the West, the first of March, or earlier, is a good time to begin; and in the South, Feb. is a good season. In warm climates it is best to complete the work rather early, before hot, dry weather.

Subjects for Grafting. All old trees, large and tolerably large trees, and large stocks, are generally changed by grafting, excepting stone fruit, in which tolerably large, thrifty limbs are budded, though these, excepting the peach, will do well if grafted early in the spring. Small trees, standard high, having very thrifty branches, may be grafted or budded in the branches. Stocks that are half an inch or more in diameter are generally grafted; when small, budding is usually practised.

Yet stocks, suckers, and limbs are sometimes grafted when they are as small as the scion, generally by splice or saddle grafting. Prefer the former. Stocks from ⅛ to ½ of an inch in diameter are grafted or budded as most convenient and suitable from various circumstances. Small trees do better for being set one year before grafting, that they may send up strong shoots. But apple and pear stocks ½ an inch or more in diameter, with good roots, may be grafted early in spring, and then set in good, rich soil, with excellent success. In this way, we have had scions grow 4 feet the first season. But when the stock has been transplanted, and had a good growth one year before grafting, the scion will grow much more.

It is better to graft them the last of Feb. or first of March, and set them out in fine loam in the cellar, in boxes or otherwise, and then set them out in the nursery as early as the ground will admit, that they may get a good start before hot, dry weather. In such case, graft low in the stock, and set it so as to cover the stock with the earth on a level, leaving half the scion above the surface, and it will often throw out new roots.

Cutting and Saving Scions. Cut the well-ripened, thrifty shoots of the previous season's growth, from healthy trees. If that be too short or deficient, cut the wood of two years' growth. The scion keeps better by cutting off a little of the previous growth, but this does more injury to the tree, as to bearing fruit. The tree is less injured by leaving a little of the new growth. Do not expose the scions to heat, drying, or freezing. If they become frozen, let them thaw closely covered, and in a dark cellar, if convenient, but not in a warm room.

Scions may be cut at any time, from Oct. and Nov. to the time of setting, but it is better to cut before the buds begin to swell. A very favorable time to cut is a few weeks before setting, and before the swelling of buds; then the scion will readily absorb moisture from the stock, which promotes a union. We have cut scions in Oct. and Nov., and kept them perfectly good for one year. We generally commence collecting in Nov., and attend to it, as most convenient, till the swelling of the buds.

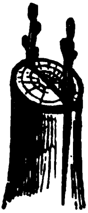
When we cut scions in the fall, or early winter, we find the best and the least troublesome mode of saving is, to bury them 4 to 8 inches deep in a light soil, that the water may not stand on them, and in sand or yellow loam, not in a wet, black soil, and in the shade, if it be rather early in the fall. They should be mixed in layers with the soil. In this way they come out finely in the spring.

When we cut scions in the winter or spring, and sometimes when we cut in fall, we pack them closely in a tight box or chest, first putting at the bottom some damp moss, sawdust, or a moist mat or cloth, covering them with a damp cloth or mat. The more scions there are together, the better they keep. Mould will not injure them. As the weather becomes warm, moisten the mats or moss, and the inside of the box a little occasionally. Keep it tightly covered, and in a damp, cool place in the cellar. Too much moisture is injurious, as it induces premature starting of buds, or kills the scions by saturation. Some scions were set with the butends in shallow water for 3 weeks, and they looked fine when set, but never grew. Keep the scion as near as possible in the same condition as when cut. Many kill them by keeping them too wet. We find sawdust, a little moist, one of the best means of saving scions, as they are closely imbedded in it. The Editor of the Al. Cultivator says that, in this way, he has saved scions, cut for budding in summer, in good condition for grafting the next spring, and those cut in winter, for budding the next summer.

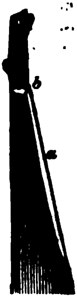
There are various *modes of grafting*, but a few of the best are sufficient for all purposes.

CLEFT GRAFTING is the most common. It is practised on large stocks and those rather small. In large stocks, an inch or more in diameter, two scions are set; this aids in healing over the stock, and keeping it sound and healthy; and when the scions interfere the second or third year, one is usually cut out. Sometimes both remain.

Saw off the stock with a fine saw, and pare smoothly with a sharp knife; then split the stock with the grafting-knife, and open it with the wedge on the same. Or a common knife and a wooden wedge may be used. Sharpen the scion on both sides, with a straight scarf like a wedge; let the scarf be about 1½ inches long, more or less, according to the size of the scion and the splitting of the stock, making the scarf of the scion as long as it can be conveniently fitted to the stock. Large scions should have shoulders at the top of the scarf, else the stock would be split too wide. It is best for the stock to cover, or almost cover, the scarfs on the scion. The outer part of the scion should be slightly thicker, to make a close fit there. Leave two buds on the scion, setting the lower bud just below the top of the stock. Adjust the scion so that the joint between the bark and wood, in the stock and scion, will exactly correspond; this is important, as that is the place of union between them. This done, withdraw the wedge, and apply the cement or clay. In cutting scions, reject the but, as the buds start reluctantly or not at all, and reject the top also, as it is too soft, or may be winter-killed.

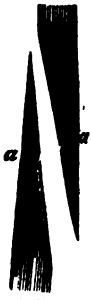

*Cleft Grafting.*

SCARFING THE STOCK. When only one scion is set in a stock of moderate or small size, if the stock be scarfed off on the side opposite the scion, (as at *a*, in the figure,) it will heal over the sooner. We have grafted as follows with excellent success. With a drawing stroke of the knife, cut off stocks or small limbs, say from ⅓ to ¾ an inch in diameter, making the length of the scarf about 4 times the diameter of the stock; cut off the point or top of the stock down to about the thickness of the scion; (as at *b*;) then split the stock, shape the scion, and with a wide knife at the end, or blunt point, *pry* open the stock on the scarfed side, and adjust the scion, which should be thicker, on the outside. We in this way; and in the fall, stocks ¾ diameter have been completely healed so neatly, in some cases, that we could by their appearance whether they had We prefer this mode; it is neat, and successful. We have put good ps on small standard trees, in one season, afting the limbs in this way, so that the e was hardly perceptible.



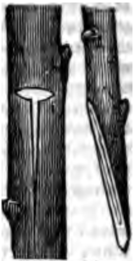
*The Stock Scarfed.*

ICE OR WHIP GRAFTING. This mode is adapt- small stocks, and it succeeds best when the and stock are precisely of the same diameter. one is larger, they should be matched pre- on one side. The stock and scion are scarfed out 1¼ inches in length, and by cutting down- in the stock and upward in the scion, a e is raised on each, (*a*, *a*,) which is fitted into f the other. This is a very perfect and d, and stone fruit will sometimes in this way than in any other. it very neatly with matting, and then ap- omposition; or better still, wind round sition cloth, without matting. The cloth ield, in warm weather, as the tree grows, s better than matting, as that will girdle se, if not loosened.



*Splice Grafting.*

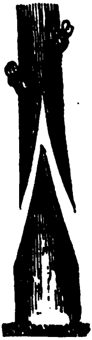
E GRAFTING. Make a T in the bark, as in ng; then cut out a small piece of bark vise just above the cut, that it may allow ion to fit closely to the wood below. Scarf e scion, as in splice grafting, commencing arf at a slight crook, if such there be in ion, that it may stand off. Sharpen the of the scion on the side opposite the scarf, g a little each side of the round part, that it may slide well, then raise the bark as in budding, and press the scion; if the upper part hugs closely to the stock the cross-cut, press it to the stock where it is set in the and bend the upper part off. Bind it closely to the and apply composition. When the bark does not peal, ck may be scarfed off a little, and the scion, formed fastened on. In this way, side limbs may be formed when there is a deficiency, and grafting done without cutting off the tree or stock.



*Side Grafting.*

*Crown Grafting* is the same as side grafting, only instead of a cross-cut in the bark, the stock is cut off. It is adapted to stocks that are too large for cleft grafting. Or, after cleft grafting large stocks, scions are set in this way between the other scions, to keep the stock alive and promote healing, and they may be cut off for scions, and the others will cover the stock.

*Saddle Grafting* is but little practised. The stock is sharpened in wedge-form; the scion is split up in the centre, and each half thinned away on the inside to a flat point, and then set on the stock, with a good fit, at least, on one edge. It is most practised on stone fruit, and when the scion is immature.



*Saddle Grafting.*

Sometimes large stocks are grafted after the usual season, by splitting up the scion 2 or 3 inches, with one side the stronger. The stock is scarfed off on one side, and the stronger side of the scion is fitted into the bark opposite the scarf, and the thin part is brought down over the scarf, and the lower end inserted under the bark below the scarf. The thin part of the scion passing over the scarf promotes healing.

Root Grafting. In the Middle States and the West, this mode succeeds better than in the North, where the seasons are shorter. Roots are cut into pieces of various sizes, from 3 to 5 inches. If large, cleft grafting is best; if small, splice grafting is preferable. Some apply composition, others omit it, as the root is covered in earth. The surest way is to apply it, but with omission it is generally successful. The better way is to have the roots accessible in winter, and graft the latter part of winter or early in spring, and set out the stocks in earth in the cellar, in boxes or not, until the ground is dry enough for setting out.

Grafting Large Trees should generally be done gradually, occupying 2 or 3 years, according to the size of the tree and manner of grafting. Graft the top first, as scions

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soon form a good supply of foliage; and as the latter
the former are removed. This was the case with the
r tree named on page 28. Or graft limbs enough for a
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or two, as the scions supply their place.

ver graft an unthrifty tree; it is lost labor. First cul-
ate, prune, and wash, and put it in a vigorous condition.

GRAFTING COMPOSITION, AND ITS APPLICATION. 1 part good
ef tallow, 2 parts beeswax, 4 parts white, transparent
sin; melt all together, turn into cold water, and work and
ll it thoroughly, as shoemakers' wax. This composition
not so soft as to melt in warm weather, nor so hard as to
ck in cold weather; but it *gives* as the tree grows. It is
great importance to have it of a right temperature, and
ll applied, else it will peel off in cold weather. While
it should be pressed closely to all the wounded part
k and scion.

en used in cool weather, it should be kept in warm
r; when it is very warm, keep the composition in cool
r. In working and applying it, the hands should be
htly greased, to prevent its sticking. Apply a thin layer
composition, covering the scion on the side and cleft in
stock, and a cap over the top of the stock, pressing it
sely and tightly around the scion, to exclude the air and
ter, pressing it also closely on the top of the stock and
o the cleft, and around the scion at its junction with the
ck.

Many experiments have been made to discover a compo-
ion without tallow, grease, or oil, as these are unfavorable,
t none is generally used. The safest way is to have vig-
us stocks or trees, and then they will soon heal, and be
t little affected by the operation.

COMPOSITION CLOTH is prepared by dipping strips of half-worn, thin cloth, into melted composition, and drawing it between two sticks to scrape off the superfluous matter. They are then torn or cut into narrower strips, of suitable width, for various purposes. This cloth is well adapted to splice grafting, and no other band or composition is necessary. When the stock is small, it is used as a band to press the stock closely upon the scion. Some use strips of composition cloth for all kinds of grafting. When partially worn, it is weak, and yields as the stock grows, so that it will not bind enough to injure it.

CLAY FOR GRAFTING is but very little used, being much more troublesome, and no surer than composition; it requires far more time in its application. Take pure clay, and mix it with an equal quantity of fine, fresh horse manure, and work in fine hair. If the clay be strong, add a little sand. Beat and work the materials thoroughly together, and apply a ball of the mixture to the stock, completely covering it. If no hair be used, the mixture must be supported by winding around it cloth, tow, &c. Some use less horse manure, and always use sand to reduce the strength of the clay. The proportions must be varied with the nature of the clay. Some is pure and very tenacious, other is weak, being naturally mixed with sand. It is better for being prepared a short time before used, and worked occasionally.

AFTER MANAGEMENT. When all the top of the stock is cut off, it is better not to cut off all suckers immediately, and thwart nature, who is trying to renew the lost top; and if a large stock be set out the spring it is grafted, it may suffer for want of sufficient top, if all sprouts be cut off immediately on starting. Yet suckers must not be allowed to choke the scions, nor draw off too much of the nutriment. In most cases, after the scions have got a good start, it is better to *spurr-in*, that is, cut off occasionally a portion of the suckers on the stock, and allow the scions the principal support. In large, old trees that are grafted, it may be well to cut off most of the suckers, and all that interfere with the scions, but leave small twigs of the old wood on large limbs till the next or second season. This will keep up the vigor and health of the tree, and save from injury by too rapid a change, or sudden deprivation of the top; it also saves the trunk and large branches from the hot sun.

## BUDDING.

Budding, or Inoculation, is the same as grafting in its effects, as in both cases the young shoot starts from a bud. It is performed at a different season, and usually on small stocks. It has the advantage of grafting in the more rapid multiplication of a variety, in being more expeditious, in allowing, frequently, of a repetition the same season, in case of failure, and of the operation without injury to the stock, and it is surer than grafting on stone fruit. It is the most common mode of propagation in nurseries, but it is not much practised on large trees, nor even on small standards, (excepting stone fruit, peaches in particular,) as grafting is preferable.

SUBJECTS FOR BUDDING. Stocks or limbs from ¼, ½, or ¾ of an inch in diameter are suitable for budding, and even those of an inch will answer, but they are more proper for grafting. It is of great importance that the stock be well established and in vigorous condition, that it may send up a strong, straight shoot, forming a good trunk for a standard, else it will be stinted and scraggy, and difficult to form into a good tree.

REQUISITES TO SUCCESS. The stock must be growing well at the time, and it must continue to thrive for 10 or 15 days after the operation, that the bud may unite with the stock. The season must be sufficiently advanced for the *cambrium* or *sliver* (the mucilage between the bark and wood) to be formed. The scions for budding must be well grown and ripening, or becoming firm, as green or succulent scions lack substance and the buds fail. The operation must be performed in a skilful manner. The stock and scion must be allied to each other; yet scions will flourish in stocks of a different species, as pears on quinces, and even in different genera, as the peach in the plum, and the pear in the Mountain Ash, thorn, and Shad Bush or June Berry.

TIME FOR BUDDING. Much depends on various circumstances, such as age and thrift of the stock, the weather, the season, &c. Judgment must be constantly exercised, (and then we may fail,) for we can no better set an exact time for budding than for cutting grain in future years. In this climate, if the stocks are young and of common vigor, and the season and the weather as to moisture about as usual, the time for budding is generally about as follows. Plum, from Aug. 1 to 10. Cherries, from Aug. 5 to 15. Pears, from Aug. 10 to 20. Apples, from Aug. 15 to 25. Peaches, from Sept. 5 to 15 or 18. Apricots on plums, same as plums. Quince, same as apples. But if the season has been forward and wet, and trees have grown fast and early, and then begin to stop from drought, the budding must be done earlier. On the contrary, if the season is backward, and the growth of trees small from unfavorable weather, and then it becomes warm and wet, and the trees grow fast, the budding must be done later. So the time may vary thus: plums, from July 25 to Aug. 25; cherries, from Aug. 1 to 30, and sometimes, very young, thrifty stocks, the first week in Sept.; pears, from Aug. 5 to Sept. 5; apples, from Aug. 5 or 10 to Sept. 5 or 10; peaches, from Sept. 1 to 20. Sometimes they gum and spoil when set the first week in Sept., in very young and thrifty stocks; again, if delayed to the third week, cold weather may check vegetation, and prevent the buds from taking. When the weather is moist, and stocks are young and vigorous, the safest time is from the 10th to the 15th of Sept. Sometimes cherries will do well budded the last of July. Again, the stocks will grow one half after that time, and the gum will ooze out and destroy the buds. If the stock be very young and thrifty, and the weather wet and warm, they will succeed when budded the last of Aug. or first of Sept. Persons of the greatest experience are liable to err in being too early or too late, owing to variable seasons. Sometimes peach buds will start, if set the first week in Sept.; but will succeed well, set as late as the 20th, if the weather be wet, and warm 8 or 10 days after that time. Again, when set as late as the 20th of Sept., they have failed, as the weather soon became dry and cold. Much depends on the age and thrift of the stock, otherwise than from the influence of peculiar weather or seasons. Plums or cherries of the third season, peaches that are two, and apples and pears that are older and larger than usual, need to be budded 2 or 3 weeks earlier than young, thrifty stocks.

If buds are set too early, they may start the first season, and then the winter will kill them. Stone fruit, set too early, is not only liable to start, but, in cherry trees, to gum around the bud, and sometimes the rapid growth throws out the bud. When buds are set too late, the bark does not peel well, and there will not be sufficient growing weather to cause a union of the bud and stock.

RING BUDDING has been practised with various success. me cases, almost every bud has succeeded; in others, ave failed. It has been attended to but little, is imper- r understood, and it is undoubtedly better adapted to the ; and South than to the North. The scions should be efore the buds swell, and set as early in spring as the will peel. Cut off the stock an inch or two above the and remove all twigs and leaves from the stock at the of budding.

EPARATION AND SAVING OF SCIONS. Cut scions of the nt year's growth, that have been thrifty and strong, and early done growing, becoming firm and ripe. For early scions on old trees of moderate growth are usually best, g more firm than those of rapid growth. In of a scarcity, we use the side shoots from s set in the spring, or even the main scion, we desire to multiply a variety as fast as ble; but they are generally too soft for early ing.

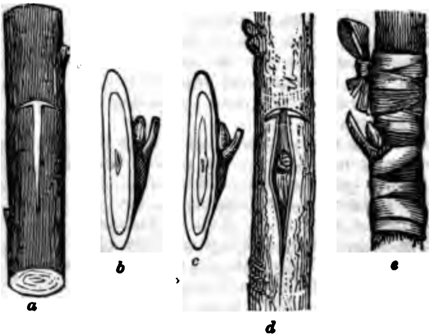
soon as the scion is cut, trim off the leaves, ng about ¼ of an inch of the foot-stalk, else eaves, which transpire moisture rapidly, will rb it from the buds and quickly spoil them. ot, dry weather, they may be spoiled in this in 2 hours.

the scions are to be used soon, wrap them in mp mat or cloth, or, for convenience, put in fine grass or leaves, and wrap in paper. end a distance, pack in damp moss, or in sawdust, in a box. To keep awhile, wrap r pack as above, and lay in a cool place in ellar, or bury a foot deep in the ground, in a shady place. They will keep longest in the or sawdust. They may be kept several in grass or leaves, and a week or more in or sawdust. To keep a long time, put in a cloth or mat, and lay in an ice-house or chest, or they be kept long in sawdust. (Page 35.)

*Stick of Buds.*

NE OF BUDDING. The most common and the best is T r. With a sharp budding knife, make a perpendicu- just through the bark, about an inch long, then a ut, in the form of a letter T. It is well to make the ut in a circular form, as in the figures *a*, *d*, that the band may cross the cut. With the ivory at the end of the knife-handle, raise the bark a little at each corner, below the cross-cut. If one has not a budding-knife, this may be done with a piece of sharpened hard wood or with the knife-blade. Lift up the bark, not force the instrument between the bark and wood, and disturb the *cambrium* or new layer of soft matter.

Hold the but of the scion from you, and insert the knife about ½ an inch below the bud that is next the but-end, and with a gentle curve cut about to the depth of ¼ the diameter of the scion — more in small, soft, or rather green scions, and less in large scions of firm or ripened wood — and bring out the knife about ½ an inch above the bud. Then put the bud under the bark, and slide it down the vertical slit till the bud is a little below the cross-cut; then, if any of the bark remain above the cross-cut, cut it off there, making a neat fit. Some make the cross-cut below the perpendicular slit, and run the bud upward, but this is less convenient, and no better.



*a* The stock prepared for the bud. *b* The bud with the wood taken out. *c* The bud with the wood in. *d* The stock with the bud inserted. *e* The stock with the bud tied in.

Wind the matting closely around the stock, so as to cover all the vertical and transverse cut, barely leaving the bud uncovered; tie with one bow-knot on the same side as the bud. Bud on any side excepting the south, where the sun may injure the bud in warm days in winter.

*On Removing the Wood.* The English mode is to apply the thumb-nail to the wood at the top, and remove it from the bark, examining carefully to see that it comes off smoothly under the bud, but if the wood comes out of the bud, leaving a minute hole there, of less size than a common pin head, the bud is spoiled, and must be rejected, and another tried. To guard against this evil, after starting the wood, and cleaving it to the bud, slip in the point of a thin, sharp knife, and cut between the wood and bark, directly under the bud, which saves it.

Of late, a new mode prevails, called the American, which is, to slip in the bud without removing the wood. Some who have lately learned the art of budding leave in the wood invariably, and say that they find from experiments this mode as successful as the other, and saves trouble. But the most skilful, who learned the English mode, take out the wood when it is rather firm, but when it is soft and succulent, they leave it in. A beginner will do about as well at first to allow the wood to remain, as he will be liable to injure the bud or bark in removing it. But in this case, mind, when the wood and bark are becoming firm, and cut shallow, so as to take but a very thin piece of wood. Either mode, well done, at the proper time, will generally succeed. There is less trouble in retaining the wood, and this mode is prevailing, though comparatively new.

BANDS. Mats, such as are used around furniture, new and strong, are cut into suitable lengths and used for bands. The soft, pliable, inner bark or rind of any trees, like bass or linden and elm, is good. Suitable materials can be had at agricultural stores. Some use cotton wicking. Woolen yarn will answer. Some budders use strips of cloth listing from the tailor's. This stretches as the stock grows, and needs no loosening. Sheet India-rubber and gutta percha are used by the curious. Matting and such material should be wet before used, to make it soft and pliable.

AFTER MANAGEMENT. In 10 or 20 days after budding, according to the vigor of the stock, the bud will have united with the stock, and if the band binds closely, so as to cut into the bark, it must be loosened and re-tied as before. If the bud has dried and shriveled, the stock may be re-budded, if the bark peels. In about 3 weeks after budding, if the bud is well united to the stock, the band may be removed. But if it does not bind, it may remain. If it remains on during winter, the ice is more likely to gather around the band, and injure the bud. As the bark of the cherry curls, the band needs to remain on longer than on other stocks.

In the spring, from the bursting of buds to the leaves becoming half size, cut off the stock in which the bud is good, to within 2 or 3 inches of the bud, and when the bud has started, tie it to the stump, if it inclines off. Keep down the sprouts; and in July, cut off the stump even with the bud, as at the line *a*, and keep down sprouts and suckers.

*Growing bud.*

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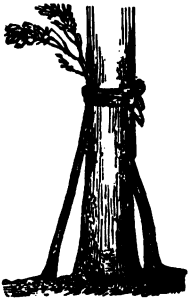
INARCHING is similar to grafting; it is the union of two trees or branches, both retaining their hold in the ground till they are united or longer. It is practised in various ways. Trees of equal or unequal size may be united lengthwise or crosswise, by shaving off a little of the wood on each, and fitting them nicely together, allowing them to join in bark and wood, as in grafting. Bind them closely together, and apply composition.

Some trees, that are difficult to propagate by grafting or budding, may be transferred into thrifty stocks or larger trees, in this way, and after they are well united, the top of the larger tree may be cut off, and the whole growth thrown into the smaller, which may, after a while, be cut loose from the ground and trimmed off, or it may remain, as in the figure on the left.


*Inarching.*

Sometimes inarching is practised in the same way as side grafting reversed. The object being to invigorate an old or slow-growing tree by setting vigorous young trees around it, and inarching with it, as in the figure on the right. The end of the tree, scarfed on the side next the larger tree, is run up under the bark, and a bandage and composition applied. By inarching, a tree may be sustained beyond its usual period, as the pear on the quince, by inarching with it young pear trees.

Inarching is often practised for curiosity or ornament. A small tree may be inarched with its neighbors on each side, and then cut loose from the ground, and flourish hanging in the air. We have seen some fine specimens of inarching by nature. In one case it was a puzzle whether a limb, in an inverted form, grew down and took root in the ground, or a tree had grown up and united with another.

**Re-rooting.** In some cases scions are set on stocks of slower growth, or a different character, as the pear or the quince, thorn on mountain ash, plums on the slow-growing Canada stock, &c., and it is desirable to produce re-rooting, that is, roots from the scion, in order to make a larger or more durable tree.

Graft the stock a few inches below the surface, and cover it with fine earth, half way up the scion, which having started well, hill up a little around it, and if it does not re-root the second year, remove the earth in July when the sap is tending downward, and with a gouge cut the wood upward, half an inch or an inch in several places in the lower part of the scion, leaving most of the bark entire; then fill up around the roots with fine rich loam, and lay around litter, and water moderately, if it be dry weather. The descending sap will extend from these tongues and form roots.

## TRANSPLANTING.

A great deal depends on this operation — far more than most persons suppose. A farmer dismissed a hand because he set only 9 trees in a day, during his absence; the next day he set the balance of a 100 himself. When they bore fruit, the 9 set by the hand proved to be more valuable than the 91 set by himself.

Better expend a dollar in setting a good tree well, than do it poorly; but this is not necessary, for in common cases trees can be well set at the expense of 10 or 12 cents each, and frequently for less.

**Preparing a place for Trees.** Having prepared the soil, as already directed, (page 30,) dig a deep broad hole. It should be 1 or 2 feet wider than the roots extend, and better if much wider, and 18 or 20 inches deep, unless the subsoil is a compost clay or marl, that will hold water in the hole, and then it is better to plant the tree near the surface.

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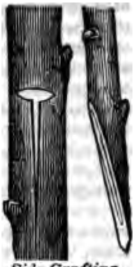
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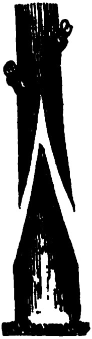
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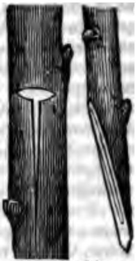
**Grafting Composition, and its Application.** 1 part good ef tallow, 2 parts beeswax, 4 parts white, transparent sin; melt all together, turn into cold water, and work and ll it thoroughly, as shoemakers' wax. This composition not so soft as to melt in warm weather, nor so hard as to ck in cold weather; but it *gives* as the tree grows. It is great importance to have it of a right temperature, and applied, else it will peel off in cold weather. While m, it should be pressed closely to all the wounded part stock and scion.

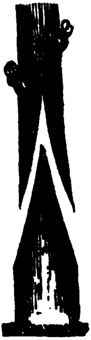
When used in cool weather, it should be kept in warm ter; when it is very warm, keep the composition in cool ter. In working and applying it, the hands should be ghtly greased, to prevent its sticking. Apply a thin layer composition, covering the scion on the side and cleft in stock, and a cap over the top of the stock, pressing it sely and tightly around the scion, to exclude the air and ter, pressing it also closely on the top of the stock and o the cleft, and around the scion at its junction with the ck.

Many experiments have been made to discover a compoion without tallow, grease, or oil, as these are unfavorable, t none is generally used. The safest way is to have vigous stocks or trees, and then they will soon heal, and be t little affected by the operation.


Side Grafting.

formed when there is a deficiency, and grafting done without cutting off the tree or stock.

*Crown Grafting* is the same as side grafting, only instead of a cross-cut in the bark, the stock is cut off. It is adapted to stocks that are too large for cleft grafting. Or, after cleft grafting large stocks, scions are set in this way between the other scions, to keep the stock alive and promote healing, and they may be cut off for scions, and the others will cover the stock.


Saddle Grafting.

*Saddle Grafting* is but little practised. The stock is sharpened in wedge-form; the scion is split up in the centre, and each half thinned away on the inside to a flat point, and then set on the stock, with a good fit, at least, on one edge. It is most practised on stone fruit, and when the scion is immature.

Sometimes large stocks are grafted after the usual season, by splitting up the scion 2 or 3 inches, with one side the stronger. The stock is scarfed off on one side, and the stronger side of the scion is fitted into the bark opposite the scarf, and the thin part is brought down over the scarf, and the lower end inserted under the bark below the scarf. The thin part of the scion passing over the scarf promotes healing.

Root Grafting. In the Middle States and the West, this mode succeeds better than in the North, where the seasons are shorter. Roots are cut into pieces of various sizes, from 3 to 5 inches. If large, cleft grafting is best; if small, splice grafting is preferable. Some apply composition, others omit it, as the root is covered in earth. The surest way is to apply it, but with omission it is generally successful. The better way is to have the roots accessible in winter, and graft the latter part of winter or early in spring, and set out the stocks in earth in the cellar, in boxes or not, until the ground is dry enough for setting out.

Grafting Large Trees should generally be done gradually, occupying 2 or 3 years, according to the size of the tree and manner of grafting. Graft the top first, as scions

at bottom will not grow well while overspread by large branches. Leave twigs and shoots on the limbs, to sustain the limb till the scions grow, and then remove them gradually, but perhaps not till the second year. Many an orchard of large trees has been ruined by cutting off all the top at once, in grafting, exposing the trunk and branches to the hot sun, and giving a sudden check to the growth and life of the tree. But if the limbs are all cut off and grafted at once, towards their extremities, say where only an inch in diameter, and numerous twigs and little limbs are left, then the tree does not feel a shock, as the twigs and numerous scions soon form a good supply of foliage; and as the latter grow, the former are removed. This was the case with the Porter tree named on page 28. Or graft limbs enough for a new top, where not very large, and remove the others in a year or two, as the scions supply their place.

Never graft an unthrifty tree; it is lost labor. First cultivate, prune, and wash, and put it in a vigorous condition.

GRAFTING COMPOSITION, AND ITS APPLICATION. 1 part good beef tallow, 2 parts beeswax, 4 parts white, transparent rosin; melt all together, turn into cold water, and work and pull it thoroughly, as shoemakers' wax. This composition is not so soft as to melt in warm weather, nor so hard as to crack in cold weather; but it *gives* as the tree grows. It is of great importance to have it of a right temperature, and well applied, else it will peel off in cold weather. While warm, it should be pressed closely to all the wounded part of stock and scion.

When used in cool weather, it should be kept in warm water; when it is very warm, keep the composition in cool water. In working and applying it, the hands should be slightly greased, to prevent its sticking. Apply a thin layer of composition, covering the scion on the side and cleft in the stock, and a cap over the top of the stock, pressing it closely and tightly around the scion, to exclude the air and water, pressing it also closely on the top of the stock and into the cleft, and around the scion at its junction with the stock.

Many experiments have been made to discover a composition without tallow, grease, or oil, as these are unfavorable, but none is generally used. The safest way is to have vigorous stocks or trees, and then they will soon heal, and be but little affected by the operation.

The land among fruit trees should be thoroughly ploughed, (but not too deep among the roots,) and often stirred with the plough, cultivator, harrow, or hoe, to keep it light, loose, and mellow, promoting the growth of the trees, and protecting them against drought. The land should also be well manured, and kept in a fertile state.

A tree that has grown long in a place, and is not supplied with manure, is much like an animal tethered to one spot with a limited quantity of food. In both cases, food must be carried to them, or they fail. Perhaps the tree is too old to advance its roots much further in quest of food, or in extension they might find scanty fare in a soil preöccupied, like the animal that, with a longer rope, is able to trespass on land already fed by a neighbor as hungry as himself. Spading around trees, or ploughing a few furrows near them, while most of the land is in grass, is only partial cultivation; but it may answer in a good soil kept in a high condition.

Some crops may be cultivated among fruit trees with profit. Others are injurious. Indian corn and all smaller grains, and crops generally that ripen their seeds, injure trees. Potatoes and other root crops are favorable; so are squashes, and vines generally. Clover, as pasturage, is favorable; as mowing, injurious. Pasturing orchards with small animals, as hogs, calves, sheep, and poultry, have a good effect, and they destroy insects, as the animals devour the fallen fruit, insects and all. Sheep are good against canker-worms. The treading and rooting of animals destroys or annoys insects in the soil. Sometimes hogs strip the bark from the roots of trees, and must be watched.

It is more economical to manure liberally, and take off crops; as the constituents of vegetables are generally different from those of trees; but when the trees nearly cover the land, it should be wholly devoted to them, and the manuring and culture continued, as the extra produce, and superior quality of the fruit, will amply repay the cost. The finest orchard in the country (page 27) has produced large crops of vegetables that have paid all the expenditures.

A great variety of manures is useful for trees, and various kinds besides animal manures are often best and cheapest; yet animal manures, about 1 part in 2 or 3, are very good in compost. Mud, peat, or muck is excellent, if dug and exposed to the air and frost one season. They are much improved by the addition of ashes, 10 or 20 bushels to the cord. A small quantity of lime, salt, soot, and plaster, are also excellent. These form a cheap and valuable manure.

Rotten wood, hay, straw, leaves, sawdust, chips, shavings, weeds, &c., are excellent manure for trees; but some alkali, such as lime or ashes, should be added to neutralize the acidity. These substances are all excellent for mulching. Fine charcoal is good; so are saltpetre, nitrate of soda, in small quantities. Guano is good, properly mixed in loam, but it is usually dear.

Salt lye or soap-boilers' waste, mixed with loam, also soap-suds, sink-water, and urine, are valuable, and it is best to mix them in compost. Bone manure and horn shavings are good. Almost every vegetable substance in liberal portions, animal substances in a moderate way, well prepared, and mineral substances in profusion or in a small way, according to their strength, are beneficial to trees, when properly prepared and applied, and a variety is usually the best. Even coal-ashes are useful on any soil. Blacksmiths' cinders are good for pear-trees and grape-vines. Night-soil mixed with loam is fine, and even granite-dust is useful.

COMPOST FOR ALL KINDS OF TREES, &c. One cord or 100 bushels of mud, muck, peat, or heavy loam, for dry, sandy or gravelly soils; or the same quantity of sand, gravel, or light loam for clayey, muddy, or moist soils; or common loam, or a mixture of different kinds, for a soil of common texture. Add 20 or 30 bushels of manure from the stable, barn-yard, or hog-pen. Add 10 bushels wood-ashes, half a bushel of salt, and a peck of plaster; a little less of these for moist land, and more or twice as much for dry soil. These will make a good compost for any trees or plants; but if convenient, add any of the materials named as manures in this chapter.

LIQUID MANURES. Soap-suds are a good manure for trees and plants of every description, as they contain a variety of elements. We have with this manure alone rendered poor land highly productive. Rev. M. Allen, of Pembroke, a veteran and distinguished farmer, showed to us highly valuable effects from applying soap-suds liberally around large apple-trees in grass land. To suds, add sink-water and urine, and all these, in mixture or separate, are better for the growing plant for fermenting a few weeks. From almost every manure, particularly those that are readily soluble, a good liquid manure may be made.

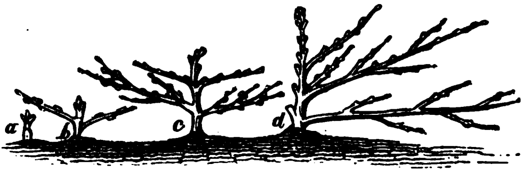
## TRAINING.

Our climate is so warm, that training fruits in a southern aspect to walls, fences, buildings, banks, &c., for the purpose of obtaining greater heat, is necessary with only a few southern or foreign fruits, in the North. Most varieties cultivated in the temperate region, come to perfection, even in N. England, in the common tree form.

Yet training is sometimes useful to obtain a due degree of heat; it is also very ornamental and convenient in a garden, giving a beautiful and tasteful appearance, economizing room, and furnishing superior specimens of fruit. There are various modes suited to different purposes, situations, and tastes.

Tree Training differs from common tree form in the production of low and extended branches, caused by cutting back the stem, and checking the upper limbs, until the lower ones become large and strong from the full force of light and heat. It admits of modifications, and is adapted to various purposes, and to almost every species of tree or plant.

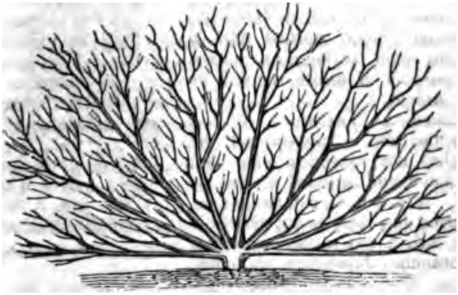
After one year's growth of the young tree, scion, or vine, cut off the main stem, (figure *a*,) leaving buds on each side. Next season, train a branch each way, and a stem upward, which cut down as before, (figure *b*.) The third season, train a new branch each way, and the stem upward, and cut back again, (figure *c*,) and train small limbs on the lower branches, on each side, or on the upper side only. Another season, train up a stem and cut down again, training out another branch on each side, and limbs on another branch,



*Different Stages of Tree-Training.*

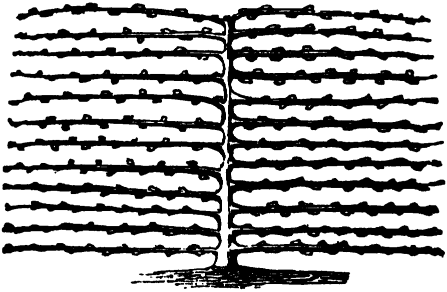
(figure *d*, showing one side.) In most other modes, the top and upper branches are kept back, to induce low branches, and give them a strong growth first.

**Fan Training** is a convenient form, and is much practised with grapes, peaches, nectarines, apricots, plums, figs, &c.



*Fan Training.*

**Horizontal Training** is a very neat and ornamental mode, giving a good exposition to light, heat, and air. It is practised with grapes, pears, apples, &c. The distance between the laterals should be from 10 to 20 inches, according to the size of the tree or vine.



*Horizontal Training.*

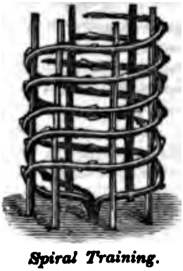
At the splendid and beautiful villa of J. P. Cushing, Esq., in Watertown, in this vicinity, where numerous experiments are made in every department of cultivation, pear trees are trained in this way, and each branch grafted with a different kind, serving an important purpose of utility, as well as of ornament.

Quenouelle Training. In this mode, the tree is run up tall, the branches not extended wide, but bent down and fastened at first by lines. It is a neat, compact mode, requiring but little room, generally about half a rod square, and from the branches depending, abundant bearing is induced. Some cut back the main branches annually, in training, to give vigor to the lower branches.

*Quenouelle Tr*

Pyramidal Training is a neat and beautiful form, adapted to apples and pears, and it affords the advantages of light and air to all parts, as the top branches do not overshadow the lower.

*Pyramidal Trai*



*Spiral Training.*

Spiral or Hoop Training is sometimes practised as a matter of convenience or of taste. Posts are set in a circle, and several vines, set on the outside, or branches from a central v the figure,) are trained a DO or around an arbor, in a spiral form.

## PRUNING.

Many fruit-growers run into extremes. Some prune too much, others too little, or none at all; and some run first into one extreme and then into the other, neglecting their trees for years, and then pruning to ruinous excess. Most trees need moderate pruning only. Some require pruning to give them proper form, and it is necessary to clear away dead and decaying limbs.

By judicious pruning we have more thrifty trees, larger foliage, and larger and finer fruit, and the sun and air are admitted into the top, to improve and perfect the fruit. The cutting off of a large limb is injurious, as there is usually a large root corresponding, which will be seriously affected by the loss, and the whole tree must suffer.

Very compact tops may need thinning. Be cautious about going into a tree to prune with hard boots or shoes on when the bark peels. Use a fine saw for large branches, then pare smoothly. Various applications are made where large limbs are cut. Grafting composition, also a mixture of equal parts of clay and cow manure, are used for large wounds from cutting of limbs and injuries. Alcohol, with as much shellac dissolved in it as will make it of the consistence of paint, applied with a painter's brush, is excellent. It excludes the air and water, and is unaffected by change of weather.

Time for Pruning. Volumes have been written on this subject, a great part of which is mere theory. Many prune in the spring from custom, and others in June because the wound heals quickly, not reflecting that it is of more importance that the wound heal soundly than quickly. We give directions according to our experience for 30 years.

Slight pruning, in which very small limbs, or dead limbs of any size, are removed, may be performed when most convenient, in any season. Moderate pruning should be done in June, July, or August, though it will answer very well till Dec. If trees are pruned in July, Aug., or Sept., the wood will become hard, sound, and well seasoned, and commence healing over; and it is not material, otherwise than for appearance, whether it heals over the first, second, or third year, as it will remain in a healthy state.

We should prefer Oct., Nov., or even Dec., to the spring, which is the worst season. The trees then are full of sap, and it oozes out at the wound, which turns black and decays, like a tree cut in the spring, and allowed to retain the bark. But if limbs, ever so large, are cut in Aug. and Sept., the wood will become hard and remain so, if it never heals over.

Thirty-two years ago, in Sept., we cut a very large branch from an apple-tree, on account of injury by a gale. The tree was old, and it has never healed over; but it is now sound, and almost as hard as horn, and the tree perfectly sound around it. A few years before and after, large limbs were cut from the same tree in spring; and where they were cut off the tree has rotted, so that a quart measure may be put into the cavities.

Pruning Young Trees and Branches of Large Ones. Side shoots of young or nursery trees should not be cut off at first, as it will induce weakness in the stem, the trees will bend over, and staking cannot save them. The only remedy is to cut them off, and let them start anew.

Examine a young tree with numerous side branches all the way up the trunk, and you will find that it tapers off as it ascends, showing that every limb gives additional strength to the tree below it, down, not only to the ground, but to the roots also. The lower limbs of young trees are like tributaries to rivers, which serve to strengthen and enlarge them. Remove these tributaries, and where will be the noble river?

Spur Pruning is the shortening of lateral branches, by cutting them off a few inches from the stem; and occasionally the largest should be cut off smoothly at the trunk, and thus gradually reduced, as the top of the tree is formed.

If you would have large trees, under which you can pass with teams, do not make them tall at once, but train them up, retaining side branches to give body and health to the trunk and roots till you get your tree up, and an elevated top to perform these offices. This may be done gradually, and with success, cutting away the lower limbs as the top becomes large. In the first place, cut out the largest side limbs, that they may not become too large, or cut them off a little way from the trunk, to check their growth, while the trunk grows and attains a larger proportion; then their amputation will produce less effect.

Allied to the cutting off of side shoots, or stripping the side leaves from young trees, is the trimming of large limbs by cutting off all shoots and spurs a considerable distance from the trunk because they do not bear fruit, when they orm an equally important office in giving growth and , not only to the branch, but to the trunk and root.

## STOCKS AND THEIR EFFECTS.

Great attention should be paid to the selection of stocks, for they often have an important effect on the growth, production, and life of the tree, and on the quality of the fruit. In most cases, grafted and budded trees are smaller and shorter lived than natural trees. The nearer the stock and scion are allied, the more hardy and longer lived the tree will be. On the contrary, the wider the difference the sooner the tree will come to an end. In extreme cases of disparity, as the pear and the apple, they generally die in a few years.

Seedling stocks are best, as suckers are liable to send up suckers, to have a stinted growth, and die prematurely. Sometimes there are great advantages in putting scions on stocks different from themselves, as we shall show under different species.

**Effects of the Stock on the Scion and Fruit.** Some years ago we published our views, showing that the stock affected the fruit in various ways. This novel view was generally opposed. But as science increases, the best practical men acknowledge the fact, and profit by it.

We have never read various articles of any writer, nor conversed much with an intelligent cultivator, who has not acknowledged, directly or indirectly, that the stock affects the fruit of the scion. We could quote numerous authorities and hundreds of cases showing that the stock affects the fruit "for better or for worse." It affects the size, form, color, quality, time of ripening, production, time of bearing, year of bearing, and as to health and perfection, or defects and decay. And the higher up the stock is grafted, the greater will be its effect on the scion.

We have noticed several cases of late plums grafted into a branch of an early tree, and when the early plums ripened, the leaves fell from the whole tree, and the late fruit failed from want of foliage. We grafted an apple that was usually sound on the top of a tree, the fruit of which was always water-cored, some of it almost a ball of water; and that grafted fruit was always water-cored, but not so on the other trees. Mr. Rivers, of the Strowbridgeworth nursery, Eng., says that "some pears that are worthless on pear stocks are improved and fine on the quince;" and every cultivator talks in a similar way. Joseph Cooper, Esq., of

New Jersey, had Vandevere apples affected with bitter rot; he grafted them with other kinds, and the fruit had the same defect. And he said, "I have, in numerous instances, seen the stock have great influence over the fruit grafted thereon, in bearing, size, and flavor."

Downing, while on this as a main subject, says that stocks never effect any alienation in the identity of the variety or species of fruit, yet he immediately speaks of "fine fruit trees whose seeds have established the reputation of fidelity to their sort; but when grafted on another stock, they lose this power." Thomas, in speaking of using stocks different from the graft, says, "Besides increasing the productiveness of some varieties, the quality too is changed, and sometimes improved." Again, "Stocks may hasten or retard ripening; they may affect the size, color, and quality of fruit."

Generally, the scion governs, but the stock modifies. On the contrary, the stock preserves its identity below the graft, though grafted low and when small, so that a sucker from the root or below the graft will yield fruit like the stock; yet sometimes the scion modifies the stock or its root, imparting some of its characteristics to it. Kirtland says that the Newtown Pippin will give roughness of bark (its own peculiar habit) to the stock. Some scions change the root of the stock to their own peculiarity. Mr. S. L. Goodale, a very observing nurseryman and fruit-grower, Saco, Me., states, in the Horticulturist, that he grafted vigorous kinds of plums on slow-growing Canada stocks, and they ran to tops, the roots being less than those not grafted. We have other cases. It is evident that the scion and stock have a reciprocal influence on each other; yet each maintains the principal control at its own end of the tree.

## EFFECTS OF SOIL, CLIMATE, LOCATION, CULTURE, MANURE, PRUNING, OVER-BEARING AND THINNING.

Soils have a powerful effect in the modification of fruit, so much that some are large, fair, and of the greatest excellence on one soil, and worthless on another. They also vary the time of ripening, and materially affect the tree in growth, health, size, and longevity.

Climate greatly affects both trees and fruit. Some varie-[illegible] flourish only in the region of their nativity, not bearing removal even to the East or West: while others seem adapted to almost every clime, and even to different hemispheres. Nearly all foreign apples fail in this country, yet the Gravenstein and Red Astrachan flourish well in almost every section. Of 800 foreign pears tried here, only a few are valuable; yet some are of great excellence in almost every section. Some foreign cherries, peaches, and plums are excellent, yet our indigenous fruits of every description are taking precedence of exotics.

**Location** has a great influence on the crop and quality. Low lands, near small streams of water, are usually frosty. By large bodies of water, a spray rises and extracts the frost before the sun shines, and prevents injury. In winter, this favorable influence is lost by bodies of fresh water, as they become frozen. Locations bordering on salt water are warmer in winter and cooler in summer, as the atmosphere is modified by the more equable temperature of the water.

Sheltered locations, particularly those that are screened from the north winds, are the most liable to frosts. (Page 180). In such situations, trees are subjected to the widest extremes of temperature; thawing by day, and freezing by night, which often destroy tender trees, or buds, or blossoms in spring. Yet such warm locations may be necessary in the North, to bring late kinds to perfection, and even training may be requisite in addition. In cities, large towns, and even in villages, the cold is usually less severe; hence, some tender trees flourish in such places.

Elevated lands are generally best for fruits; and though less exposed to frost than low lands, during 24 hours or the year, the high lands, on an average, are cooler. In some places on the Connecticut river, vegetation is 3 or 4 weeks more forward than on the neighboring highlands. An elevation of 600 feet is equal to a degree of north latitude. Hence a high mountain has the climate of a more northern region. A hollow among highlands is colder than such a situation down lower.

Sometimes the buds or blossoms are killed below, and escape above, a horizontal line; so nice is this distinction, sometimes, that only the tops of tall trees have fruit on them.

Great elevation is unfavorable, from the pelting of winds upon tender blossoms, fruit, and foliage, and in some cases it is too cold to perfect the fruit.

**Culture** has a powerful effect. Where the soil long remains stationary, the roots and the trees become a measure stationary also, and the fruit is light and wort Those unacquainted with good management of fruit can hardly imagine the good effects of cultivation. effects of good culture are as evident in the quality and appearance of fruit as in the product.

Manure is necessary to the successful production of all kinds of fruit, unless they are raised in new or rich lands. On old lands it is indispensable, and a variety is requisite to give perfection to fruit, more particularly when the land has become exhausted. Sometimes manure has a great effect on the quality of fruit, as well as on its product size, fairness, &c. On old lands, ashes, plaster, lime, manure, &c., should be applied liberally.

Pruning, judiciously practised, has an important effect both in the quantity and quality of fruit. We have improved trees, that yielded but little poor fruit, by moderate pruning, so as to produce a good crop, of an excellent quality. The nutriment necessary to support decaying limbs, and superfluous suckers and branches, was turned to the production and perfection of the fruit. In this way, a half hour's labor will sometimes increase the crop to the amount of several dollars.

Over-bearing and Thinning have influence also. In some cases, a tree hangs so full that it is impossible for it to perfect the whole crop; and the consequence of allo it all to remain on,will be small, pale, insipid fruit. In cases of over-fulness, if half the crop be taken off small, the other half would not only equal the who quantity, but owing to large size, fairness, and su quality, it would sell for more, perhaps twice as mu the market.

## ACCLIMATION.

In changing any variety of fruit from one climate another, the removal should be under favorable circumstances. In carrying trees to a colder climate, it should be in the spring, that the growth and ripening of the tree be in accordance with its new climate, and not have a winter come suddenly on the luxuriant growth of a wa region. On the contrary, on carrying trees to a wa climate, transfer them in the fall or early winter, to a the sudden changes from a cold winter to dry, hot

But the better way to accustom fruit to a different climate is by carrying scions or seeds; the latter should be preferred, when they will produce the genuine kinds. In these cases, the growth of the whole tree, and its habits, will in some measure be adapted to its new home. There are but few foreign apples worth cultivating in this country, as they are defective; yet we have superior apples, admirably adapted to our climate, from the seeds of foreign kinds or their descendants. Most foreign pears fail from some imperfections, yet we have fine hardy natives from their seeds.

By acclimation, the peach has travelled gradually from a region of perpetual summer, to a cold clime, where it often bears, without injury, 30 or 40 degrees below freezing. We have Baldwin apples in Maine that have been there 50 years, which are perfectly hardy, while those carried from this region to that State often fail in cold winters.

## DWARFING.

For want of room, or for the purpose of causing trees to bear young, dwarfing is desirable, and in this way larger specimens of fruit are often obtained. Dwarf trees are usually very great and early bearers. In a small garden, where there is room for only a few large trees, many dwarfs may be set, affording a variety and succession of fruit. If a piece of land be set with many dwarfs, instead of a few large standards, a crop of fruit will be obtained much earlier; and in this way, a small lot may be made ornamental.

The best way of dwarfing is to use a stock naturally small, as the paradise stock for the apple; the Canada, and other slow-growing stocks, for the plum; the quince or thorn for the pear; the plum for the peach; the mahaleb stock for the cherry, &c. The paradise stock reproduces itself from seed, the fruit of which is small and acid. There is a large dwarf kind, called Doucain, the fruit of which is sweet, produced also by seed. Mahaleb is a wild cherry of Europe. In every species of fruit, there are some slow-growing kinds that may be used for dwarfs.

We have often raised trees, of the same species, that differed more than half in their growth. Dwarfs may be made by working a slow grower on a stock, and the desirable kind on that. Frequent transplanting tends to dwarf any tree, by retarding its growth. Dwarfs may be made of any tree by root-pruning, *shortening-in* of the branches, and giving only moderate culture.

## ROTATION.

In raising nursery trees, or growing standards, there must be a rotation of crops, or great care to supply, in the manures, those elements that abound in the trees. We saw some seedling apple trees of one year's growth, the rows of which ran across a strip of land in which seedling apples had grown the year previous. The stocks on that strip were about half as large as the others. On a part of the other land were plum seedlings the previous year. There the apple seedlings were not quite as large as where other crops had grown, which shows that, though one species of trees will grow tolerably well after another, yet they do better to succeed other crops. Numerous other experiments show the same results. Dr. Lee, editor of the Southern Cultivator, says that a nurseryman lost 17,000 grafted apple trees, in consequence of having exhausted the soil of elements necessary for their formation, by having grown, year after year, and removed from the land, crops of trees. Analysis showed that there was a lack of potash and lime, which stable manure did not sufficiently supply; and he further says, that you may as well grow one variety of plants year after year, for a century, on the same land, as to fatten the same kind of hogs year after year, in the same pen, by supplying the food they need. To this remark we would add, that if you turn pigs into a lot of clover, roots, nuts, or fruit, and remove them and put in others, when the food is mostly consumed, the second lot must be fed more than the first; so of trees. A piece of land may be so rich as to produce a good growth a number of years; then it may need manure, and of particular kinds, containing the elements composing the trees. If trees are removed, or decay, and others of the same species are set on the same land, liberal manuring will be necessary in raising another crop. A renewal of the soil may be necessary from the forest or pasture. If the trees decay on the land, the process will be slow, and there will at first be much acid in the rotten wood, and there will also have been much exhaustion from prunings, waste of leaves scattered to the winds, and the removal of fruit. These losses must be supplied. These facts show the importance of changing the site of an orchard when the trees have decayed, or changing the soil, and adding lime, ashes, salt, charcoal, &c., in addition to common stable manure.

## NEW VARIETIES FROM SEED.

A few varieties of fruit only produce the same from seed. In this way some peaches, a few plums, apricots, and cherries are propagated. Most kinds are propagated by grafting and budding; and from the effects of the stock, and from the mixing of blossoms, a great many new varieties are produced from seed, the most of which are worthless, tending back to the natural type, or wild state.

Yet incidentally, and by design, new and superior fruits are constantly produced. In this way we have, of comparatively recent production, nearly all our best fruits, and we are making valuable acquisitions annually. Many of the best kinds of fruit are cultivated together; and when in blossom, they mix by wind, by insects, and by intermingling of branches, so that a profusion of new kinds are produced.

A cross between two kinds is formed by shaking the branch of one over the other while in blossom. A more scientific way is to remove the stamens of a flower, as it begins to expand, and then cover it with gauze, and when the pistils are perfect, apply to them the pollen of a desired kind, and cover again till out of blossom. This forms a regular cross of desired kinds, and the parents are well known. (Page 76.)

## DO SOME VARIETIES DECLINE?

On this subject there is ample room for argument and theory, on both sides. In some parts of the world, and in different ages, varieties of fruit have apparently declined. This seems a powerful reason in favor of the affirmative of this question; but it is more plausible than sound. Perhaps we ought *to blame the culture, not the fruit;* for while a kind declines in one section, it flourishes in full vigor in another, and even in the same section, in a congenial soil, and under good management. A variety may flourish in new la
but soon some ingredient is exhausted, and it will
flourish there again, unless scientifically manured, th
with the deficient elements. The St. Michael or V

Doyenne pear, that cracks and blights in the old parts of N. England, is in full vigor in the Middle and Western States; and under superior management in Boston, they are very fine. It also does pretty well in the interior of N. England.

Generally, it is the soil, not the fruit, that declines, from repeated cropping, without suitable manure to preserve its original fertility. Perhaps there is in the soil no potash or other alkali, to dissolve silex for the plant or tree, or some salt or other ingredient is wanting.

Fruit may decline from a change in seasons, or from a country gradually undergoing a change in its climate by reason of the reduction or increase of forests, by the reclamation of wet lands, by changing the course of streams, or other increase or decrease of bodies of water. Location and elevation often have an effect equal to a change of climate. All these things, and many others, have effects, particularly on very susceptible kinds.

A variety may decline from being on unhealthy stocks, and the scions from it may retain and continue the defect. Sometimes we have a great change in weather, both in summer and winter, and the constitution of the atmosphere may be occasionally modified. Fruits generally decline, not from intrinsic defects, but from external circumstances. The cholera and potato rot do not indicate any decline in the human race or in that valuable esculent.

A fruit may decline in what is called its native climate, where the tree had its birth, when in reality its true nativity was in a more congenial region where the seed grew. This first cause is often overlooked in tracing the origin of fruits. The orange fails here, though produced from seed, as that was raised in a milder clime. Grafting and budding tend to deterioration, as the stock and scion often vary in their habits, even when of the same species; (page 59;) and when the stock and scion are of different species, as the quince, thorn, mountain-ash, and apple for the pear, there is still greater degeneracy in tree, though there may not be in fruit.

Though there is far less declension in fruit than is generally supposed, yet there are, doubtless, cases in which decline is peculiar to, or inherent in, the variety. It is the same with fruits as with races of animals and vegetables generally. They may decline from inherent defects, or from exter- ircumstances.

## TO INDUCE FRUITFULNESS AND EARLY BEARING.

In some cases, it is desirable to bring fruit trees into early bearing, to determine the kind, and for other purposes. Trees may grow large and luxuriantly, and be a long time in bearing.

**Root Pruning** has been practised of late years, for this purpose. The roots are laid bare, and some of the longest are cut off a few feet from the tree; this checks its growth, and early bearing is the result. This is practised also for the purpose of dwarfing in gardens, where small trees are preferred. The fall is a favorable season for this operation, but it shortens the life and restricts the size of the tree, and ranks with the fancy work of the amateur.

**Ringing.** Carefully remove a ring of bark about one sixth of an inch wide from a limb you would form blossom buds, or retain and perfect its fruit, but do not cut the wood. As the sap returns in the bark, it will be checked, and tend to the growth and fruitfulness of the branch, but at the expense of the rest of the tree. It is like starving one pig to fatten another, instead of keeping both growing. Granulations will be formed, and the wound healed; then the sap will pass on, else the branch would die. This may be done in July, to form blossom buds, and just before blossoming; to set fruit, retain and improve it. It is adapted to the pear and apple.

**Bending the Limbs down**, and fastening them in that position, as in quenouelle training, retains the sap in them, inducing bearing and improvement in fruit, without injury to the tree. Hence there is more philosophy than whim in the saying, that the bending down of fruit trees by heavy snows indicates a fruitful season.

**Transplanting** a tree frequently has a tendency to check its growth, and cause early bearing; but it will reduce its size, and shorten its life. The effect is the same as root pruning, as roots are lost by removal.

**Stocks.** By putting scions into stocks of slow growth, as pears on quince and thorns, luxuriant plums on Canada stocks, peaches on plums, apples on paradise stocks, the effect is similar to root pruning, both in causing early bearing and in the final effect on the tree.

**Shortening-in** is the most successful, convenient, and least injurious mode. In July, clip off about a third of the present year's growth; this will cause the formation of blossom buds, instead of an extension of wood, as would be the case without clipping. We have found this very effectual on the peach. If buds have set naturally, cutting off half the last year's growth early in the spring will generally improve the fruit by reducing its quantity.

**Change of Soil and Addition of Condiments.** Sometimes the soil may be too rich in vegetable and animal manures, and a change of a part for gravel, sand, or loam, with the addition of ashes, salt, lime, charcoal, bone manure, &c., may be necessary. Again, trees may suffer from poverty, and require richer soil, manures, and condiments, also more culture. A lean, porous soil of sand and gravel may require mud, peat, clay or loam, and vegetable matter.

## CAUSES OF FAILURE.

These are various, often beyond the control of man, and some even defy his *powers* of investigation. We have treated of spring frosts and insects, under these heads. Drought is a common cause in our long, hot summers, especially on dry lands. The preventives are deep culture and frequent stirring of the soil, the mixing clay, mud, peat, and marl with dry soils, the use of salt, ashes, and plaster, mulching or covering the land.

There may be an abundance of manure, and yet lime, ashes, salt, bone manure, iron, or some other ingredient, may be wanting. The soil may contain too much vegetable mould, and not enough gravel and sand.

General debility of the tree, or some disease or affection unknown, may cause failure. A hard winter, or sudden changes from heat to cold and the reverse, may injure the tree, or kill the blossom buds.

A powerful wind, or heavy storms, when the trees are in blossom, may beat off and waste the pollen or fertilizing dust; hence a failure, sometimes, on the windward side of a tree only. A very powerful heat at this season is supposed to have an unfavorable effect, perhaps by hastening too rapidly the process of inflorescence, which may prevent the usual operations of insects on the flowers. We have known l [illegible] crops after cool weather at the time of flowering, which continued the blossom for several weeks. Slight frost, and cold winds, are more destructive when the fruit is setting, or soon after, than when the tree is in bloom. The most common causes of failure are evident and remediable. They are a want of manure, thorough culture, and judicious pruning.

## SCRAPING, WASHING, SLITTING, AND DISBARKING.

Scraping the ross and loose bark from fruit trees, with a deck scraper or other implement, is very beneficial; it gives a healthy action to the bark, and deprives insects of shelter, and nest for their eggs. This may be done at any time excepting spring, when the wounded bark turns black, and causes decay. June is a good time.

Washes of various kinds are useful in destroying insects and their eggs, in giving the trunk and branches a fresh and healthy appearance, and serving for manure as they run down around the roots. Caustic washes, as a solution of potash, lime, wood-ashes, &c., are beneficial, and are very efficacious in destroying wood-lice, preventing the operations of borers and destroying their eggs.

A strong lye of wood-ashes is a very convenient and excellent wash; and if the ashes are applied with it, so much the better. One pound of potash to a pailful or 2 gallons of water makes a very strong wash, and it is highly valuable. Some have used 1 pound to a gallon without injuring; others have injured trees by so powerful a caustic. Fresh lime is good, but it should not be used as whitewash, as it will injure the trees by closing the pores of the bark, and preventing the favorable effects of dews, rains, and air, and a caustic coat long on the bark is liable to kill it. Besides, whitewash on trees is unsightly. Use hen or other manure with lime, to destroy its tenacity; then the whole will be gradually washed down the tree for manure.

Soft-soap, strong soap-suds, and whale oil soap quite strong, are valuable washes. Add ashes to soap-suds. A compound may be made of soap-suds, tobacco water, soot, a little salt, hen, pigeon, or cow dung, sulphur, and other nauseous and rich substances, more or less, that will be highly useful in destroying insects, cleansing and improving the bark, enriching the soil, and annoying insects.

Apply washes freely, and several times in a year, with a stiff brush, to all parts of the trunk and the large branches, carefully avoiding the leaves, if the wash be strong.

Slitting the Bark. Some person says that there is no more danger of the bark getting too small for the tree, than there is of a boy's skin becoming too small for his body. But in some cases, under a vigorous growth, the bark of trees will crack open, particularly cherry trees, and the wood is liable to crack also. In such cases, slitting may save the trees, as the openings will be small when there are a number of slits. In this operation, do not make long slits with the grain of the wood, but make short slits in spiral form. With suitable scraping, washing, and other good management, slitting will seldom be necessary.

Disbarking. Old bark-bound trees, particularly apple trees, are improved by stripping the bark from the trunks, about the time of the longest days. In this case, the trees should be put into a thrifty state, and the bark taken off with great care, so as not to disturb the *cambrium* between the bark and wood, which will soon form a fresh, healthy bark. This mode has been practised but little. It is well to screen the naked trunk from the sun a few weeks.

## RENOVATING OLD TREES.

Sometimes old trees, or those not very old, fail from the exhaustion of the soil, while they still possess life and vigor under good management. In most cases, trees may be renovated by ploughing, manuring, pruning, scraping, and washing. Let the manure be adapted to the soil, as directed on page 53. Keep the land well cultivated. Stir the soil often.

In case trees are far gone by neglect, remove the earth, and prune off rotten or decayed roots, and replace fresh soil from the forest, including mould and leaves, or from a pasture not recently or ever ploughed, or any other fresh soil different from that around the tree, and thoroughly mix with the soil a liberal quantity of compost. (Page 53.) And if the soil be not removed as far as the roots extend, enrich it, and stir deep and thoroughly to the extent of the roots, but carefully avoid injuring them.

Prune off about one third of the limbs, including those that are dead or decaying; scrape and wash thoroughly. In this way many trees, now useless, may be made to bear abundant crops of excellent fruit. Many trees that do not now produce a peck of fair fruit, could be made to yield several barrels of the finest quality, and at a moderate expense too. Sometimes the larvæ of the 17 years' locust seize upon the roots of trees, and draw their support from them. Examine, and remove this evil, if it exists.

## TO SAVE GIRDLED TREES.

Take large scions, long enough to reach over the girdling or decay, scarf off each end on the side to go next to the tree, like the lower end of the scion in side grafting, and insert each end in the same way, under the bark, the upper end being the reverse of side grafting, and like inarching. (See figure, right side, page 46.) In large trees 12 or 15 scions are inserted, which sustain it. We have seen trees 8 or 10 inches through that were girdled, or otherwise dead in the bark, saved in this manner.

The sap ascends in the sap wood, and descends in the inner bark, and the tree, though starting well, will decay, unless by scions the returning juice can descend to the roots. Dr. Shurtleff had a pear tree with dead bark on the trunk, too low down to insert scions. He set young trees near it, and inserted them by inarching; after a while a sprout came from the root, and that was inserted, also, above the injury. The old tree and the young stocks did well, the sprout connecting the trunk with the root. Trees decaying in the bark, all round the trunk, are saved by scions extending over the defect, and inserted under the live bark.

## TO PROTECT TREES FROM MICE, RABBITS, &c.

Meadow mice or moles often destroy trees by girdling. As they work under the snow, treading down early snows around trees is a preventive. Heaping up a cone of earth around a tree, in the fall, is generally sure. On grass land, a cart-load of loam will suffice for several trees, and if spread around them in spring, will improve the soil.

Trees may be saved by tying around them laths, shingles, old barrel staves, boards, old leather, canvass, cloth, birch, &c. In England, soot and milk, applied as paint, protects trees from hares and rabbits, and it may be good against mice. With tobacco, sulphur, assafœtida, hen or manure, or other offensive substances, and mud or c give body and tenacity, a mixture may be made th doubtless prevent all depredations of the kind; and if rains do not wash it off in the spring, remove it with s suds. Industrious cats are useful.

## TO PROTECT BLOSSOMS FROM FROST.

When trees are in bloom, and a frost is expected, bundle of straw thoroughly, and put it into the tree; large tree, several bundles. Or when a frost has occu syringe the tree all over with cold water, before sunrise, it will extract the frost without injury. When it is cl in the morning, the change to warmer will be gradual the injury less, than when the sun shines on the fi blossoms.

For a number of trees, make fires in several parts of garden, of chips, saw-dust, tan, &c., and then throw some materials rather moist, to make a slow combustion smoke. Do this at 12 o'clock, and keep up the smoke sunrise. Trees may be kept back by planting in cool tions, on an elevation, or on a northern exposure. placing snow and ice around trees, if it be not already th in plenty, and covering it with straw, hay, tan, shavi &c., blossoming may be retarded.

## INSECTS.

Numerous insects, of various kinds, prey upon fruit trees. Some are destroyed with ease, others with diffic Man, the proud lord of creation, may control the e h and lion, and capture the leviathan of the great de yet he must see the favorite products of his industry away before the formidable doings of tiny insects. shall here treat only of those insects that operate general and, under each species of trees, of those that affect t kind mostly.

Mr. David Haggerston, formerly farmer and gard J. P. Cushing, Esq., Watertown, highly distinguish l in his profession, discovered the valuable properties oil soap for the destruction of insects. On t ches of trees it may be used very str tolerably thick; but on foliage the rule is to use 1 pound to 7½ gallons of water. This will kill tender insects, but not hardy ones. We have tried 1 pound of oil soap to 4 gallons of water, on the leaves of all kinds of fruit trees, and various plants; and this is the strongest that they will bear, and they will not bear this in a hot sun. It should be applied in the evening, as the sun is declining; or very early in the morning, so as to dry wholly or partially before the sun shines warm on the leaves; or on a dull day. If applied when it rains, or immediately before, the effect will be less. For want of oil soap, use the same quantity of soft soap. It is not so strong, and perhaps more may be used.

This powerful preparation will not kill rose bugs, and, perhaps, some other extremely hardy insects may escape. For such, steep half a pound of tobacco in a gallon of water, and add that to the 4 gallons of solution of whale-oil soap. This will destroy them. A pint of whale-oil soap weighs 1 lb. 2 oz. So use a pint to 4½ gallons of water, or eight ninths of a pint to 4 gallons. Oil soap of a dark color is the strongest, as the alkali predominates; that of a light color is the weakest, as the oil prevails. Be not afraid of killing a leaf, while insects are destroying millions.

Nearly all kinds of birds devour vast numbers of insects and their eggs; therefore they should be protected and kindly treated. No boys should molest them or their nests, but rather encourage their sweet music and useful labors. Toads, snakes, and bats destroy multitudes of insects.

**THE ROSE BUG** is a beetle about a third of an inch in length, of a slender body, tapering to each end. It comes from the ground in June, at the time the rose blossoms. It is the greatest pest that the fruit grower has to contend with, coming often in swarms, destroying both foliage and fruit of almost every description. Sometimes they are so numerous that the cultivator retires from the scene discouraged, which their ravages soon render desolate. They often stop the growth or destroy tender trees, and ruin the crops of large ones. After 5 or 6 weeks, (sometimes they abound only 2 or 3 weeks,) they suddenly disappear, entering the earth a few inches, where they deposit their eggs. A strong solution of whale-oil soap and tobacco water is the best remedy. Ashes, plaster, lime, &c., will annoy but not destroy them. (See above.)

**APHIDES OR PLANT LICE.** They are on various plants;

are of different colors, as green, brown, blue, black, red, crimson; of various sizes, from that of a mite to the bigness of a pear bug; naked, or clothed in a woolly or furzy covering. As they multiply with astonishing rapidity, they should be destroyed as they make their appearance.

For their destruction, use whale-oil soap, or soap-suds, or tobacco-water, or all, or any of them, mixed, as strong as possible without injury to the leaves. (Page 73.) Lady bird or lady bug, (*Coccinella*,) and a green fly (*Chrysopa*) destroy the aphis.

LEAF ROLLERS, AND LEAF EATERS. There are several kinds of caterpillars that roll up leaves that serve as a habitation and for food. Some live in buds, others fasten several leaves together to form a shelter. Some live under the bark, and others live on leaves without shelter. Crush them, or apply whale-oil soap or tobacco-water.

OTHER CATERPILLARS, WORMS, AND INSECTS, too numerous to describe, occasionally prey on the foliage of fruit trees. For their destruction, use whale-oil soap, or soft soap, or a decoction of tobacco, or add this to the soap if necessary; or, when the dew is on, sprinkle on the foliage dry ashes, or powdered lime. The liquid is most effectual.

TO DESTROY GRUBS AND INSECTS IN THE GROUND. Stir up the earth, and let hogs root it and devour them, if convenient; fowls are also very useful. Exposure of the earth, by ploughing, &c., in fall or early winter, will be a means of destruction by frost. Fresh slacked lime, or salt, in spring, will have a good effect, both in the destruction of insects and improvement of the trees.

TO DESTROY WINGED INSECTS, make flambeaux of tar or other slow combustion, and thousands will fly into the flames and perish. Set open vessels of whey, vinegar, and water, or other liquid that will retain them, and set in each vessel a lamp, just above the liquid, and many will be caught. In a flat vessel of oil, set a light, and cover it with a bell glass, besmeared with oil, in which the insects will be caught, or they will fall into the dish below. Take transparent bottles, fill them nearly up to the neck with sweetened water, and hang them into fruit trees. They will often become filled with a vast variety of insects. Pitchers, mugs, &c., will answer. Tie them up by the handle so that they hang obliquely, and fill them two thirds full of sweetened water. Many insects are thus destroyed which consume fruit when ripe, such as hornets, wasps, &c.

## TO FRIGHTEN BIRDS.

The birds, after protecting your fruits from insects, must be frightened away, unless allowed a share. Images avail but little; in one case a bird used a pocket for a nest. Bells put in operation by windmills have a good effect. By a string extending to the house, they may be rung occasionally when there is no wind. Looking-glasses, or pieces of the same, suspended so as to swing in the sun, have a good effect, from their reflective power. A shingle hung by a string, swinging and revolving, will frighten birds; but pieces of bright tin are better, and if two be near each other so as to make a tinkling, it is better still. Birds, kindly treated, are not easily frightened.

## TESTING FRUITS FAIRLY.

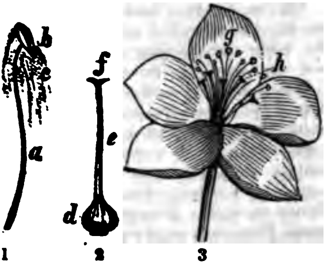
A tree, shrub, or vine, may for the first or second year of bearing produce fruit inferior in size, appearance, and flavor, and yet, after a few years, yield the finest fruit. Therefore the cultivator should be patient, lest he condemn his best trees. While waiting for a fair test, the tree will be gaining in size, and be more valuable for grafting, if it should prove to be poor. The Black Eagle cherry bore so poor fruit at first that it would have been destroyed had it not been raised by a young lady. It is one of the finest fruits.

## BLOSSOMS.

A complete flower has on the outer side green leaves or *sepals*, called the *calyx;* the delicate inner leaves, or *petals*, of various hues, called *corolla; stamens*, which are usually long slender stems, next within the petals, having on the top a box, or *anther*, in which is contained fertilizing dust or *pollen;* and *pistils* in the centre of the flower, which are usually shorter and stouter than the stamens, and less in number. The bottom of the pistils is the *germ* or rudiment of future fruit, the middle is the *style*, and the top the *stigma*. In some flowers, the calyx is wanting, yet a flower is regarded as *perfect* when it contains, in the same blossom, both stamens and pistils, these being the organs essential to reproduction.

*Fruit Blossom.*

Fig. 1, Stamen. *a*, filament; *b*, anther; *c*, pollen.
Fig. 2, Pistil. *d*, germ; *e*, style; *f*, stigma.
Fig. 3, Perfect flower. *g*, stamens; *h*, pistils.



Some trees or plants have the stamens in one flower, and pistils in another, on the same tree, as corn, (the silk is the pistils, the stamens are on the spindle,) cucumbers, &c., and are called *monœcious*. Others have the staminate flowers on one tree or plant, and the pistillate on another, (page 266,) as the shepherdia, (page 288,) asparagus, &c., and are called *diœcious*. Most trees and plants producing fruit have perfect flowers, like the apple, pear, peach, plum, cherry, &c.

No Blows is a term applied to apples which have no blossoms or seeds, and but very little core. We have seen several varieties. The fruit is very irregular or deformed. It is said that such anomalies are produced by inverting scions, or by inverting a small tree, after burying the top in the ground, and it has taken root. We cannot explain.

## LABELS.

Trees should be marked promptly, distinctly, and durably. Trust not to memory. It is sufficient to bear mistakes which will occasionally occur, without adding to the vexation by losing marks. A nurseryman lost $500 by budding from a falsely marked tree, before it bore. So much for one error.

Zinc. Write on it with 2 parts of fine verdigris, 2 sal ammonia, 1 lamp-black, 20 water. Mix in a mortar with a little water at first. Bottle, and shake it occasionally. Or with types, stamp the number on the zinc. If zinc be d till oxydized or rusted, it may be marked with a lead Old zinc is thus prepared. Fig. *a*.

or Lead. Write with a sharp awl, : through the coat of tin; or stamp ame or number with type. Fig. *a*. eet lead in the same way.

d with Printing. Print with com- types' and printing ink, on smooth better for being thinly painted with lead, using a lever for a press; more t, and, for nurserymen, more expedi- han writing. Four or five of each let- enough. Bourgeois, Long Primer, or Pica, is a good size. Fig. *a*.

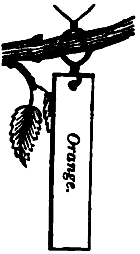


*Fig. a.*

d with Writing. Use soft, smooth, e wood, and paint with white lead, or, if inted, moisten the wood, and write with a good strong with a heavy hand. Fig. *a*.

d with Numbers. A label of durable wood, inches long, and one half to an inch wide, lf as thick. Fig. *b*. On the corner cut 1 for 1, 2 for 2, 3 for 3, 4 for 4. For 5, cut a across the edge or narrow side; and for 10, h across the wide side, 2 for 20, 3 for 30, 4 For 50, a notch obliquely across the nar- de; for 100, a notch obliquely across the ide. In this simple way any number can dily expressed, and if made of sound pine last many years, and it will endure if up in laying trees into the ground. To in this way, a knife and any stick are suf- . Make two contiguous sides, one wider the other, with a square corner between Mark stakes in the same way. In this way each r of fruit is numbered. Figure *b* is numbered 177. mark, 100; next, 50; 2 next, 20; next, 5; 2 next, 2. lan is our invention, and from its simplicity and dura- we prefer it to all others, for most purposes. It is nient for marking all kinds of plants by labels or , or for marking boxes of earth in which seeds are ed for sowing in spring.

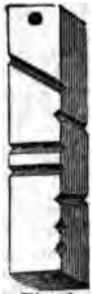
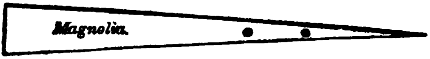


*Fig. b.*

ening of Labels. Stout twine will generally last a leather longer; both are transient. Strips of chest lead are durable, and they expand as the tree grows. Annealed copper wire is durable, but mind that it does not cut the limb. Nos. 21 to 23 are a good size. Tin, zinc, or

*Fig. c.*



sheet lead, may be cut wide at one end for marking, the other running to a point, and bent round the limb. The point may be run through a hole in the label, and clenched. Fig. *c*.

## MAKING WINE.

The juice of most kinds of fruit, with only the addition of sugar to some kinds, will make good wine; and the best of vinegar, without sugar. (Page 269.) Such wine is the best for medicine, being free from alcohol, which is usually injurious to health, often doing more injury than the juice of the grape, with which it is mixed, does good. (Page 240.)

There are three important requisites in making good wine: body, flavor, and color. Some fruits contain all these, and make excellent wine alone, as the Catawba grape. Others contain only flavor and color. Body or strength may be added by sugar; and this is necessary to correct acidity.

To make good wine, take well-ripened, but not over-ripened fruit, mash it finely, then press out the juice. In a small way, it may be pressed in a stout cloth; in a larger way, in a coffee bag; on a large plan, in presses.

Strain the juice, add what sugar is necessary, put into bottles, or in casks, set in a cool cellar to moderate fermentation; cork lightly at first, lest the bottle or cask burst; watch carefully, and tighten the cork as the fermentation abates, that it may work as little as possible. When fermentation ceases, cork closely. A dry cellar is best.

In this simple way we have made excellent wine of the juice of various kinds of fruits, and kept it a year or two in the best condition; and we never add spirit, as it injures the quality; nor spices, as they spoil the flavor. We prefer making a strong rich syrup, instead of adding water to the juice. It keeps better, it is in less compass, and water may be added when used.

To the juice of currants, which is rather thin, and very acid, we add a pound of sugar to enough to make a quart bottle. The juice of milder fruits requires less sugar; and that which is rich does not require so much to give it a body.

Longworth says that "Catawba grapes, well ripened, need no sugar; not well ripened, require 8 or 10 ounces of sugar to the gallon of wine. Isabella makes a sweet wine with 1¼ or 2 pounds of sugar to the gallon. When grapes are too ripe, the saccharine fermentation takes place in the fruit, which gives it more sweetness, but less flavor."

Wine may be made from green grapes, or even from the leaves and tender shoots of the vine, mashed in water, by adding sugar liberally.

Make vinegar in the usual way, by exposing the juice to the air. It will be better for keeping it a while with moderate fermentation, as in making a pleasant liquor or wine.

## GATHERING AND PRESERVING.

The value of fruit generally depends on the manner of gathering and saving. Carelessness in this way will often reduce its value one half. It should be gathered with great care, as bruising disfigures it, causes decay, or insipidity. In all cases, coldness retards ripening; heat accelerates it. Fruit is often kept back in ice houses for exhibition, or for higher prices. In hot weather, ripening is retarded in a cool cellar.

Early apples and pears, and transient fruits, such as peaches, cherries, plums, &c., that are to be carried some distance to market, must be gathered before wholly ripe, as they will ripen on the way.

Some put winter fruit in cellars, on shelves exposed to the air. Others pack them as tight as possible in casks, bins, and boxes. These differences in opinion will never be reconciled, till people learn the important fact, that there is a wide difference in the nature of fruits: one kind ripening to perfection on a shelf, while it sweats and becomes poor in a tight cask; another becomes insipid when exposed, but in a tight vessel comes to its highest state.

False notions prevail in regard to keeping fruit perfectly dry. We have made experiments in packing it in dry and moist saw dust, moss, sand, and various other substances, and in the moist state it not only kept better, but the quality was finer. Surround moist fruit with dry substances, and they will generally extract its juice and life; yet a [illegible] kind.

will keep well in this way, as grapes in cotton, &c. We have packed fruit in dry sand, bran, saw dust, charcoal dust, plaster, cork dust, wheat chaff, straw, &c., and it never paid half the trouble.

Fruits keep best in rather damp cellars, if aired, in cool, dry weather. In dry cellars they shrivel. Those usually transient have been kept a year, sealed up in tin cans. Some French writer recommends putting fruit in a tight vessel, enclosing it in another, and filling the intermediate space with water. Fruit will generally keep well buried in the ground, in a dry soil, surrounded with boards or straw, to keep it from the ground, and making a cone of earth over it, or a covering of boards, to shed the water.

Fruit will keep well sealed up in stone jars. Plastering around the cover, closely fitted, with lime mortar, or moistened plaster, which will set immediately, will answer; so will several thicknesses of paper tied closely round. Set it in a cool place, or cover it water tight, and bury it in a free soil, just below freezing, for winter, and still deeper in hot weather.

Shephart's Patent Fruit and Vegetable Preserver is a cellar for fruit, surrounded with a wall, inside of which are two boardings 6 or 12 inches apart, filled between with charcoal dust, tan, or saw dust. Over this is an ice-house, or tight roof, and as the ice melts it descends inside the boarding, runs to the centre of a tight floor, and then runs off. The temperature is equable, and about 2 degrees above freezing. We have eaten fruits, of a transient nature, preserved in this manner for 6 or 8 months. In similar manner fruits are saved in ice-houses in this vicinity. And they are packed in ice here, and sent to the warm regions in the four quarters of the world; even the evanescent peach has been sent in a fine condition to the East Indies. It affords immense advantage in preserving fruit stationary, or in transportation. Fruits should be kept in a pure atmosphere to prevent their imbibing any unpleasant effluvia, and they should be kept as cool as possible without freezing. Some fruits require to be brought to a milder place, or a warmer room, in winter, to ripen them to perfection, and much depends on ripening them at the proper period. (Page 000.) By various experiments and inventions, the aid of science, and the important advantages of ice, great improvements are making in the preservation of fruits, and in the manner of ripening them.

## THE APPLE, (*Pyrus Malus.*)

All our apples are from Europe, and they originated from the wild crab of that country. In this country are several kinds of wild crab. We have seen one in New England with small, long, dark red fruit. At present nearly all our best apples are natives. In the Northern, Middle, and Western States, they are perfectly at home, and the finest in the world. The hardy kinds flourish in Canada, Nova Scotia, and New Brunswick. In the northern part of the Southern States this fruit does well, and late kinds flourish in the southern part of the Union.

The apple is a hardy tree, of moderate growth, and low spreading form. Some grow rapidly, and form large trees. Several in the U. S. are 12 feet in circumference. In a wild state, or with moderate,regular growth, they live 100 years, or more, but under high culture they often fail at half that age. We have had fruit from a tree in Plymouth 200 years old. An apple tree brought from England and planted near Hartford, Ct., 209 years ago, produced fruit last year. With its blossoms of white, tinged with red, or with beautiful fruit, the apple is an ornamental tree, and some with fine forms and rich dark green foliage, are always so in the gay season.

In the temperate regions, the apple is not only the most valuable fruit, but it is of more importance than all others. Other kinds are more luscious and delicate, but these qualities render them transient, while the apple endures and may be had in excellence throughout the year. These remarks on the paramount importance of the apple apply to the present state of cultivation. Various other fruits, when duly attended to, will assume far more comparative importance. Yet the apple, from hardiness, easy production, great excellence, and being always in use, both fresh and dried, will hold a decided superiority over any other species.

THE USES are various. The fine kinds are excellent for the dessert. Besides the pleasure of this luxury, and the nutriment in rich apples, they have an excellent medicinal effect. They are gently laxative, and keep the system in a good condition. They serve as a healthy repast for children, who would be often eating something that is injurious from too much nutriment.

Apples are cooked in various ways, and may at all times form one or more dishes on the table. Stewed apples are an excellent sauce. Frying in a pan after meat, is a fine preparation. They are excellent in dumplings. Sliced sweet, or mild apples, in Indian and other puddings, are better than raisins, and so they are in boiled rice, and in warm Indian bread. They make fine pies and tarts. A *dowdy*, or big pie, makes a meal for a whole family.

They may be made into apple sauce and kept a long time. Apple butter is a still finer dish. Caudled apples (boiled whole in just water enough to cover them, and molasses or sugar to sweeten them) are excellent. Suitable kinds make fine preserves. Roasted or baked, they are good without further preparation. They make an excellent jelly.

Baked sweet apples and milk is a luxury, excellent food, and medicine. We know a gentleman who, 10 years ago, was in a hopeless case of consumption, and by long and exclusive use of this dish, and a little bread for nutriment, and lime-water for a condiment, he was cured. As one evidence of the severity of this case, and waste of the lungs, one side of the breast had sunken in. This diet would cure thousands suffering from inflammatory diseases, caused by high, rich, constipating food. It is also good for dyspepsia.

Dried apples keep long, and are a convenient article of trade. Some families prepare half a ton in a year. Apple molasses is good for tarts, pies, preserves, puddings, flapjacks, &c. We have made excellent molasses by boiling down the juice of sweet apples, pressing and boiling as soon as possible, after grinding. Another mode is, to put the apples into boilers, with just water enough to steam them, and when soft, put them into a basket, with a little straw first, and press them with a heavy weight, and boil down the juice. This molasses is said to be superior. The system is rude, and may be improved.

Apples, under proper feeding, are valuable for all kinds of stock, from birds to the largest animals. Mixed with roots of various kinds, and cooked with a little meal or bran, they make a fine food for fattening or store hogs. They are also good for sheep, cattle, horses, and even for milch cows. Good pork has been made almost wholly from apples, and it is a cheap food, where there is not a market for fruit. The pomace, in moderate quantities, is good for all kinds of stock. When dried it is good for sheep in winter. Cider from apples makes excellent vinegar. Its use as a beverage has declined under the enlightened march of temperance. Sweet apples and mild sour are best for stock as well as for bipeds. Besides the large trade in the usual way, apples, in connection with ice, are exported from this city to many parts of the world, even to the most distant regions and hottest climes.

SOIL AND LOCATION. The apple will flourish in almost every soil and location, under good management; but the best soil is a tolerably moist, deep loam, inclining to marl or clay, with a good portion of vegetable mould. Most tillage, suitable for grass, potatoes, cabbages, and where corn will well flourish in dry seasons, is better for the apple than dryer soils. Rocky and stony lands are preferable, and all the small stones should not be removed. A hard pan forms a good bottom, but a porous subsoil is unfavorable.

Some varieties do best on a deep, sandy loam, and early varieties will often do better on tolerably dry, warm soils, which hasten their maturity, while others flourish best on strong moist loam, and late kinds require a cool soil to retard their ripening. Although a rather moist soil is best adapted to the apple, yet, with good culture, fine crops are raised on light soils. If the soil be not naturally suitable, it may be improved. (Page 29.)

Moderate elevations, or undulating lands, or hills, are the most suitable locations. In very low, sheltered situations, there is more exposure to the extremes of heat and cold, and late spring frosts, and early fall freezes; yet the apple is hardy and will generally succeed in such situations. On very high locations, especially on the tops of mountains and high hills, and some other bleak places, there is too great exposure to winds and pelting storms, which may injure the blossoms, fruit, and foliage.

In exposures to the sea, frequent and heavy storms are injurious, especially to blossoms, and sometimes to tender foliage, and more so from salt spray. Though apples do well in almost every exposure, they are more sure in their products, in a northern, northwestern, or western exposure, yet the difference is not material. In a northern southern exposures and warm soils are necessary to bring certain kinds to perfection; and in the south, a cool soil and location are necessary to guard against drought and heat, and retard ripening.

PROPAGATION is by grafting and budding desired kinds on seedling stocks. Prepare a good tillage soil, by one or two years' culture, and good manuring. Root crops are the best preparation. Sow pomace, mixing in ashes or lime to neutralize the acid; or wash out the seed, by beating up the pomace in water, and turning it off, as the seeds sink, and repeat till the seeds are clean. We have washed out 12 or 16 quarts in a day. If the seeds dry it will not injure them. We have thousands of trees from seeds kept over one summer. Sow late in fall, or mix the seeds with three times their bulk of moist loam, or fine sand, and put them into the cellar, or out of doors, keeping moderately moist till spring; or put them in a box and bury them in the ground till spring.

As to freezing being necessary, it is all a whim. Early in winter, we put 3 pecks of seeds into loam, placed half out doors, the other half in the cellar, sowed in spring, and all came well. If apple or pear seeds are kept dry through the winter, they will not vegetate in the spring, but come the second season if not disturbed. We find, by experiments, that seeds from natural trees make more vigorous stocks than those from grafted trees. (Pages 59, 64.) Sow early as possible in spring, in drills, 1, 2, or 3 feet apart, according to the time the stocks are to stand. Cultivate well.

Some have splice grafted apple stocks of only one year's growth, but it requires a rich soil to send up a vigorous shoot. Generally, the stocks, when two years old, sometimes three, are set in nursery rows, 4 feet wide, the tap root being shortened, the trees 10, 12 or 15 inches apart; and if of a good size and vigorous, they may be budded the same season; but if small and slow growing, better let them remain another season. A strong stock is absolutely necessary to send up a shoot 4, 5, or 6 feet high the first season, and the next it will put out branches, and then be fit to set as a standard.

Stocks ½ an inch or more in diameter, are grafted at the ground, and they soon produce a good tree. When budding fails, the stocks are generally grafted the next spring, and come on with those that were budded. Some graft or bud without transplanting the stocks, but this mode does not form so fine roots, the tap root being long and the laterals short. When good stocks can be obtained from ½ of an inch to an inch in diameter, good trees can be shortly produced by grafting low, and setting them so as to cover the stock and half the scion. (Page 34.)

PLANTING. We have given particular directions for transplanting, on page 47. As to the distance between apple trees, much depends on circumstances. A person wanting many kinds on a small space should set thick and shorten-in the limbs, as they interfere, and in due time, cut away the poorest trees. In general orchard culture, 30 or 33 feet is a good distance. Some set them 40 feet apart, but it allows only about 28 trees to the acre, and it will be a long time, if ever, before they cover the land. When set 2 rods apart, peach, plum or cherry trees may be set between, and in most cases these trees will flourish, bear, and fail, before the apple trees will need the room. (Page 27.)

If some of the intermediate trees last long, and are fruitful, give them a chance, or prefer the most profitable, cutting away the limbs of the poorest where they interfere. In devoting land wholly to the apple, we would put 100 trees on an acre, (almost 21 feet apart,) and they would bear many years before interfering, and then cut away the poorest trees.

In this way, trees will produce good crops 12, 15, or 20 years, without interference, and the cultivator have the fruit of 100, instead of 28 trees, when 40 feet apart, or 40 trees when 2 rods apart. A farmer, when stocking his lands, and beginning with calves, might as well begin with only the number his lands would sustain of full grown animals, as for the cultivator to set only as many trees as will have room when of a full size.

CULTURE AND MANURE. Our general remarks on culture, (page 51,) apply to apple trees. . The land should be kept in good condition by culture and manure. Merely stirring the earth is beneficial. Thorough culture and good manuring of the apple tree will amply repay in abundant and excellent crops. A well cultivated and judiciously managed orchard, will produce 3 or 4 times the amount of one that is under poor management or neglected.

What we have said on manure, (page 53,) will apply to the apple. The following table shows the inorganic matters in the apple, which should be applied liberally. Supply potash in wood-ashes; soda, in common salt; phosphate of lime in bones; carbonic acid in charcoal, and manure from animals; lime in lime, old plaster, chalk, bones, hair, or horn shavings; magnesia in this salt, or magnesian lime. The apple requires much lime and potash, especially on old orchards, or where several crops of nursery trees are raised on the same land.

*Analysis of the Ash of the Apple.*

| | Sap wood. | Heart wood. | Bark of the trunk. |
|---|---|---|---|
| Potash, . . . . . . | 16.19 | 6.620 | 4.930 |
| Soda, . . . . . . . . | 3.11 | 7.935 | 3.285 |
| Chloride of sodium, . | 0.42 | 0.210 | 0.540 |
| Sulphate of lime, . . | 0.05 | 0.526 | 0.637 |
| Phosphate of peroxide iron, . . . . . . | 0.80 | 0.500 | 0.375 |
| Phosphate of lime, . . | 17.50 | 5.210 | 2.425 |
| Phosphate of magnesia, | 0.20 | 0.190 | |
| Carbonic acid, . . . | 29.10 | 36.275 | 44.830 |
| Lime, . . . . . . . . | 18.63 | 37.019 | 51.578 |
| Magnesia, . . . . . | 8.40 | 6.900 | 0.150 |
| Silica, . . . . . . . . | 0.85 | 0.400 | 0.200 |
| Soluble silica, . . . . | 0.80 | 0.300 | 0.400 |
| Organic matter, . . . | 4.60 | 2.450 | 2.100 |
| | 100.65 | 104.535 | 111.450 |

PRUNING. (See page 57.) The apple requires moderate pruning only. Much care is necessary to give the tree proper form, height, and direction, in its early stages. If limbs interfere, cut away the poorest, and those that are decaying. Thin out very compact tops. When the branches are very long and scattering, like the Seaver Sweet, cut them off a few feet from the top, that they may spread and form a closer head. The apple bears on the spurs and shoots of the last and previous years' growth.

BEARING YEARS. Most apple trees bear full every other year, and few or none in intermediate years. Some bear twice or thrice as much one year as they do the next; and a few bear every year, nearly alike. The cause assigned for alternate bearing, is that the tree becomes exhausted from a heavy crop, and needs rest and renovation of its powers.

But analogy shows that this is no reason, for some species of trees and shrubs bear abundantly every year, and generally if an apple tree produces a little fruit when it is not the bearing year, the fruit is small and knurly, though the tree is in full vigor.

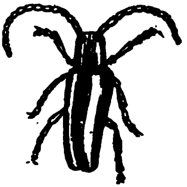
We first offered to the public the important fact that most of our varieties of apples,in N. England, natural and grafted, produce large crops in even years; 1846, '48, and '50, if the season be favorable, and light crops in odd years — 1845, '47, '49. Like all new things, this view has been opposed and ridiculed, but never met fairly with facts. We have observed it for 30 years, and the same orchards that bore profusely in even, and sparingly in odd years, in our boyhood, still continue the same. These important facts cannot be laughed down, nor upset by false reasoning. On the contrary, numerous correct observers are confirming what we have said. We never knew a great crop in odd years, nor a small crop in even years, though unfavorable weather may cut off the crop in some places, as on the seaboard in 1846, and some sections in 1848. Mr. J. O. Wellington, of West Cambridge, who cultivates fruit extensively, raised 1100 barrels of apples in an even year, the next year only 300; again 1500 in an even year, and only 500 the next. As an evidence that this was generally the case, he sold, in an even year, at $1.50 per barrel, in an odd year at $3.00.

Yet some trees and some orchards, and in some neighborhoods, most of the trees, bear in odd years.

The Baldwin, Greening, Danvers Winter Sweet, Porter, Jewett's Red, Hubbardston Nonsuch, and many other prominent kinds, bear mostly in even years. Correct knowledge on this point may be turned to advantage, by cultivating constant bearers, or more of those few varieties that bear in odd years. By cutting off all the blossoms in the bearing years, it will change; but after all that has been said on this subject, but little has been done in this way, as it is much trouble; and we believe that a tree will gradually get back to its natural habits. It is our opinion that in Middle and Western New York, the largest crops, if any difference, are in odd years.

## INSECTS.

Numerous insects attack the apple in wood, bark, leaf and fruit; yet with diligent and skilful warfare, the cultivator will be victorious; but with neglect, the insects will prevail, and his labor will be lost. See remarks on insects generally, and their destruction. (Page 73.)

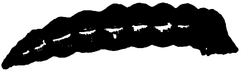


*Perfect state.*

The Apple Tree Borer attacks the apple tree, quince, mountain ash, locust, white ash, hawthorn, and various other species of thorn, and aronias, and is very destructive. It is from the larva of the two-striped saperda, (*saperda bivittati.*) The upper part of the body of the perfect insect is marked with two longitudinal white stripes, among others of a light brown, while the face, antennæ, the under side of the body and legs are white. The size is shown in the figure.

This beetle comes forth from the tree in June, during the night, flying from tree to tree for food, or companions. In day time it rests among leaves, on which it feeds. In June, July, or early in Aug., it deposits eggs upon the bark of the tree, generally at or near the ground. Mr. Buckminster, editor of the Massachusetts Ploughman, who has given great attention to this subject, says she lays ten eggs at a litter, of the size of a common pin head, arranged thus: • : : : : • The larva or young borers, from the eggs, are fleshy, round, whitish grubs, without legs, tapering a little from the first ring. The head is small, horny, and brownish.

This grub eats through the bark, where it remains the first winter. The next season it penetrates the wood, throwing out its dust or cuttings, by which it may be traced, generally ascending, and boring deeper into the tree. Its whole passage, is, usually, about 12 or 15 inches. The third season, nearly two years from its entrance, the full sized borer, as shown in the figure, approaches the surface of the tree, when it undergoes its final transformation, and leaves the tree, as we have already stated. Those who say it remains three years in the tree, reckon the year of its ingress and egress.



*Full grown Borer.*

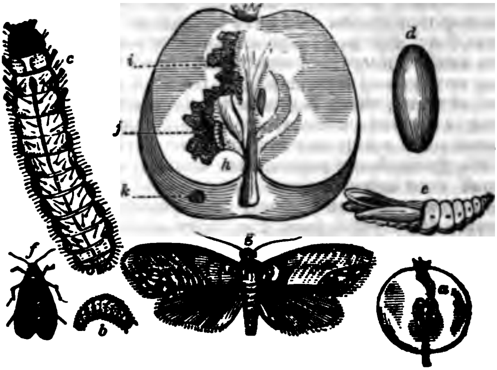
Rarely the borer *gets off the track* and descends in the tree.

nes it enters the trunk several feet above the ground,
lom it penetrates the limbs.
DY. The modes for destroying borers, after they have
ted the tree, are various; such as killing them by
g a piece of wire or whalebone into the hole; apply-
i ed brimstone match to the entrance, or putting
of camphor or other offensive matter into it, and
u up; or cutting the borers out with a chisel or

ention is better. Keep the trees smooth and well
, that insects may have no harbor. Wash them in
uly, and Aug., with a solution of potash, (page 69,)
her strong lye of wood ashes; or with 2 quarts of soft
whale-oil soap, and ¼ of a pound of sulphur to 2 gal-
water, which is still better for adding camphorated
assafœtida, tobacco, hen manure, and other offensive
, and a little clay to make it adhesive.
Buckminster recommends washing the trees with a
wood ashes, or a solution of potash, strong enough to
an egg, with a view of destroying the eggs or young
Horace Collamore, Esq., of Pembroke, a skilful agri-
t and accurate observer, states in the Ploughman,
an orchard much infested with borers, he prevented
rther depredation, by washing his trees with 2 quarts
soap, and one fourth of a pound of sulphur, to a pail-
vater. He prefers this wash to potash water, which is
o injure young trees, if very strong.
etimes ashes and other offensive matters, laid around
s, serve as a protection. The best way is to keep
and weeds cleared from the tree, that it may be ex-
scrape smooth, that it may have no shelter for its
nd then wash the tree often with substances offensive
tructive to insects; in addition examine the trees fre-
, and if there be any borers, kill them before they
one any damage, and while it is an easy task. One
n time saves ninety-nine.
E-WORM OR CODLING-MOTH (*Corpocapsa pomonella*) was
ed from Europe. It is numerous in New England,
the seaboard generally, and becoming more common
nterior of the Middle States. It is a beautiful moth,
d and thorax brown, mingled with grey; the fore
seem like watered silk, crossed by numerous grey and
lines, near the hind angle a large, oval, dark br

spot, with edges of copper color. The hind wings and abdomen are light yellowish brown.' During the latter part of June and July, these moths lay their eggs in the eye or blossom end of apples, sometimes in summer pears. They hatch in a few days, and the worm eats into the apples, and in a few weeks attains its full growth. The apples ripen and fall prematurely.

*Apple Worms in different stages.*



*a* The young larva, or worm, in a small apple. *b* The full grown worm. *c* The same, greatly magnified. *d* The cocoon. *e* The pupa or chrysalis state. *f* The perfect insect, the usual size. *g* The same, greatly magnified. *i, h* Passage of the worm in the fruit. *j* Larva or worm, in the apple. *k* Place of egress.

Soon after the apple falls, and sometimes before, the worm crawls into the crevices of the tree, or other places, spins a cocoon of a white delicate web, where it remains till the next season. It is supposed that some come out soon and produce a second generation the same season.

Remedy. Pick up the fruit as fast as it falls, and destroy the worms, or let hogs run in the orchard and eat the fallen fruit. Lay old cloths in the crotches and around trees, and many will crawl into them, and may be caught. By scraping off the loose bark in spring, many will be destroyed.

The Canker-Worm (*Anisoptery pometaria*) is most common in N. England, and on the sea-coast. The parents, or moths, are represented in the cuts. They generally begin to come out of the ground in March, early or late, according to the season, and continue for several weeks. Sometimes they begin to rise in Oct., and continue at intervals through the winter, when the weather is warm and the ground bare. They make for the tree, the female crawling up the trunk, and the male flying. They soon pair, and the female lays 60 or 100 eggs, some in clusters, others scattered, glued to the tree with water-proof varnish, in the crotches, between the bud and twig, in moss or other convenient places, sometimes even on fences. The eggs hatch as the foliage expands, on which the worms feed voraciously, with most destructive effects, eating also the blossoms and tender fruit, often destroying the produce of extensive orchards, even year after year, till the trees are nearly killed. In about 4 or 5 weeks from hatching, they leave the tree, some descending on the trunk, others letting themselves down by their threads, and burrow in the ground several inches deep, where they remain until the time of their ascension, as above named. The worms fully grown are about an inch long, of slim form, have 6 fore and 4 hind legs. They are of various colors, changing at different ages, and they may be of different varieties. The apple and elm are most subject to their depredations. They also attack cherry, plum, and lime trees.

*Male.*

*Female.*

Remedies. Dry ashes or fresh slacked lime thrown on the tree when the dew is on, will do some good, but many will take shelter under the leaves. One pound of whale oil soap to 4 gallons of water, is effectual. (Page 73.) On jarring the limbs gently, they will spin down, and may be killed where the surface is smooth.

As it is difficult to destroy the worms, it is best to prevent the ascension of the female moth. The most common mode is to put canvass or thick paper (old leather is better) around trees and apply tar to it. Sometimes this must be [illegible]wed every day, when they appear in multitudes. A few drying wind or drizzly rain will harden the tar, so that they can pass over it. Mix train oil with the tar to prevent this. When in crowds, the foremost go on to the tar and form a bridge, over which the others pass. India rubber dissolved in whale oil, over the fire, will last a long time without renewing, and is equally as effectual as tar. Cut a semi-circle from two pieces of board, a little larger than the tree; put them on as a collar, fastening them at top with hasps or cleats with screws; stuff sea-weed, soft hay, rags, wool, or tow between the boards and tree. Underneath this collar apply tar, or India rubber and oil. Mr. F. Dana, Roxbury, in the Ploughman, recommends a band of zinc around the boards, extending 1½ inch below, and varnished with shellac, to make it slippery, or glass on the under side.

Burn India rubber, and a viscid substance will fall, that will long retain its sticking property. This may be applied directly to the tree, or under a collar.

A writer in the Iowa Farmer tied bundles of straw around his trees, with a single band, 2½ feet from the ground, letting the ends of the straw stand out from the tree. The worms were caught in the straw, and he gently pounded the straw, below the bands, with a covered maul, and he killed thousands. When the season was over, he burnt the straw, and applied lye to the trunks and branches. This saved 700 trees, and he had no more trouble.

It is said that orchards pastured by sheep are never injured by canker-worms. As sheep are around the trees, the oily matter from the wool probably has a favorable effect.

American Tent Caterpillar, (*Clisiocampa Americana.*) This insect is so common, that it is called *the caterpillar*. It is indigenous, and abounds on the wild cherry. It is the most destructive of all insects to the apple and cherry, if neglected, yet easily destroyed. The eggs, as represented in the cut, in clusters of several hundreds, hatch when trees put forth their tender foliage, on which the larva feed, and when numerous they defoliate the whole tree. The fruit fails, the tree is stinted, and a mark of reproach to the negligent owner. These caterpillars make a web for a shelter, and are at home morning, noon, and evening, and at all times in stormy weather.

When full grown, this insect is about two inches long, the head black, the body party-colored. In New England, it begins to wander from the tree in June, gets into a crevice, makes a cocoon of loose silk, remains 15 or 16 days in the pupa or chrysalis state, then bursts its web, and comes forth a winged miller, of a dusty brownish color, flying about in great numbers in July, entering houses by night, and laying eggs on cherry and apple trees.

The best remedy is to gather the clusters of eggs, which are near the end of the young shoots, and generally on the lower branches, in autumn, winter, or early spring. If not done, the nest may be seen like a spider's web, and should be destroyed immediately, by crushing the young worms, or by applying whale oil soap in water, as for canker-worms, or water of ammonia in a sponge or rag. Some burn them with spirits of turpentine or sulphur. Strong tobacco water applied is good. With Pickering's brush, or a mop of rags on a pole, they may be rubbed to death, or taken down with the web and crushed.

**Bark-Louse** (a species of *cocus*) is a pearly, scale-like substance, on the bodies of young apple trees, the limbs of older trees, and less frequently on pear trees. They stint the growth. Each cell contains many eggs; they generally hatch in May and June. The young are very small, nearly white, oval.

*Remedies.* Use 1 part of soft soap with 4 of water, and a little fresh slacked lime; or a solution of 1 lb. potash to 2 gallons of water. Apply about the first of June. A lye of wood ashes is good.

**American Blight** (*aphis lanigera*) is a false name, as it was first known in Europe. It is very destructive in England; much less so here. The eggs, imperceptibly small, are enveloped in a cotton-like substance, and deposited in chinks and crotches, at or near the ground. When the young are hatched in spring, they appear like specks of mould; the grown insect is one tenth of an inch long, covered with white woolly hair. They feed on the sap; have no wings, but are wafted by their down from tree to tree. They puncture the bark, produce warts, the leaves fall, the branch fades, the disease spreads, and the tree dies. As a remedy, apply a solution of whale-oil soap, or lime wash. The apple tree is most liable to its effects.

**Cider** is valuable for vinegar, though the temperance re form has almost banished it as a beverage. The farmer no longer toils hard in fall to fill his cellar with cider, nor works hard all winter to drink it. Yet cider is valuable for vinegar. Apples for cider are better for growing exposed to sun and air; hence those from a young orchard are best. Those not very juicy make the strongest cider. The Harrison and other fine cider apples of New Jersey, produce about 1 barrel to 10 bushels.

Apples for cider should be well ripened, and carefully picked, free from stems and decayed fruit. They should lie in a dry situation till partially mellowed, but ground before any decay. After grinding, let the pomace lie in the juice, exposed to the air, and stirring may be necessary to this purpose, from 12 to 24 hours, during which time the saccharine fermentation will greatly improve the liquor.

In all the operations, strict neatness should be observed, and no water used, not even to wet the straw. The first and last running from the cheese is not so good as the middle. Press out soon, and put into a cool cellar before the vinous fermentation takes place, straining the liquor carefully, and bunging it up as closely as it will bear without bursting the cask, that the fermentation may be moderate, which will give body and strength to the cider. Mustard seed, charcoal, saltpetre, and other substances, moderate fermentation. The following is a good anti-ferment for cider, wine, &c. Plaster of Paris 1 part, mustard seed 2 parts. Use half a pint to a barrel.

GATHERING AND PRESERVING. The fruit is of a finer quality for remaining on the tree till well ripened, though it w often keep better by gathering before quite ripe. As season, in this climate, some in warm situations gathe last of Sept., while many commence Oct. 1st, and con through the month. In this climate, there is danger of from hard frosts late in October, and sometimes earl

Gather apples in dry weather, and pick winter f all dessert fruit, by hand, and handle it in every wa care, to prevent bruising. Do not let it lie out in h posed to the sun and air, nor stand in barrels in the it will lose its life. In packing in barrels, shake down and head up full, pressing the head gently on the fruit. it may not shake and bruise in moving. Apples in b are generally laid in an open shed, or covered up under or on the backside of a building, where they remain till is danger of injury from frost, (which requires a degree of cold sufficient to form ice nearly half an inch thick,) when they are put into a cellar, which should be well aired on the north in cool dry weather, even occasionally in winter, when not so cold as to freeze; and when the wind is at the south, the cellar should be shut close, and better for keeping it dark at all times when not open to admit cool air. The nearer the fruit is kept to the freezing point, the better. It will not generally freeze unless the temperature is 5 to 7 degrees below 32 degrees, or the freezing of water. Apples headed up in close barrels will bear a frost 10 or 12 degrees below the freezing point.

With a good, cool, well aired cellar, it is much better to put the apples into the cellar as soon as gathered. In packing apples for exportation, or nice and tender fruit for transportation, it is better to wrap each fruit in paper; and in some cases, for perfect security, it is necessary to pack in bran, saw-dust, cotton, chaff, &c. This saves from bruising, and in cold weather prevents freezing.

THE VARIETIES are innumerable. In many parts of the country, large orchards were set and allowed to produce natural fruit; hence the great variety and excellence of our apples, combining almost every good quality in tree and fruit. We have made an estimate that in the State of Maine, more than 2,000,000 of varieties have been produced; and hundreds and even thousands of kinds may be found there superior to many recommended in fruit books.

In treating of apples, we must notice some not among the best, as they have gained a name above their merits, and a caution is necessary; new and better kinds should take their place. For a good apple, particularly for the market, we need a combination of the following fine properties: good grower, good bearer, fruit large, handsome, and of excellent quality. Some not hardly first-rate are profitable for the market, as they sell from their size and beauty, and tolerable quality. For the private garden, quality is of great importance; yet appearance, growth, and bearing, are important considerations also. With the amateur, quality is the main thing, and appearance next, while growth and bearing are of less regard.

A dessert apple should be of good size, handsome form, beautiful color, fair appearance, tender, crisp, juicy, and of a rich, fine flavor. Cooking apples should be rather large, fair, and of an even surface. Their qualities are various for different purposes. Some brisk, acid apples, that are poor for the dessert, are excellent for the kitchen. Some mild dessert apples are among the best for cooking; for this purpose some sweet apples rank high. A few will not cook well, but retain their form and remain hard after this process. Some cook quickly and form a jelly, which is desirable for some purposes, but not for others. The best sweet apples for milk, are those that bake perfectly soft, yet retain their form. Those that are hard after baked, and those in the opposite extreme, that fall down flat from their own weight, and mix up with the milk, like jelly, are not so good.

Many apples are adapted to general culture throughout the country, and some are suited to various soils as well as climates. Others flourish only in particular locations and climates. Some seem adapted to general sections only, as to the North, the Middle Region, the West or the South. But some generally cultivated in one of these sections have not been fairly tested in others. With thorough trial of all our best apples, giving them suitable situations and management, we should find, in many cases, that the cultivation of different fruits in different sections is owing in part to the partiality and convenience of the cultivator, as well as to the fruit. We make these remarks to encourage the fair trial of our best fruits throughout the land. We have endeavored to discriminate with those fruits that have been extensively tried, and to show in what regions others are mostly cultivated, and the origin of new kinds.

We have so many fine native apples that but few foreign kinds are worthy of attention. The Red Astrachan and Gravenstein are the only foreign apples that are popular throughout the country. A few others are valued highly in some sections.

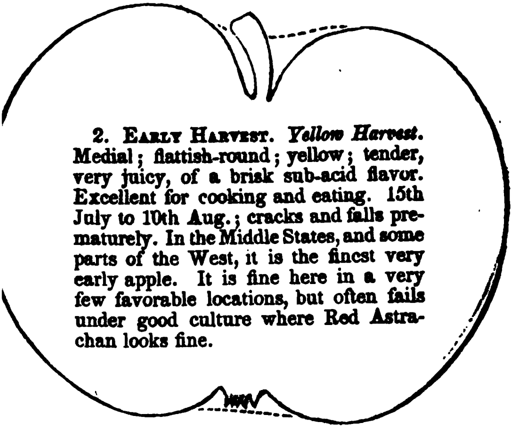
Dr. Holmes, editor of the Maine Farmer, and Secretary of the Maine Pomological Society, has politely furnished us with outlines and descriptions of 7 apples which the convention sat in judgment on, and recommended as the best native apples of that State that had come under their examination. To such we have added, *M. P. Society*.

We have put the time of ripening a little earlier, to correspond with the time in this State, according to our general system.

## SUMMER APPLES.

te *summer* apples here are *early fall* fruit in Me., N.H.,
, &c.

1. WHITE JUNEATING, *Juneating Bracken.* Small, flattish-
nd, pale yellow, sometimes a faint blush; flesh white,
o and pleasant. Early in July; great bearer. An old
variety, popular in some sections for its earliness.



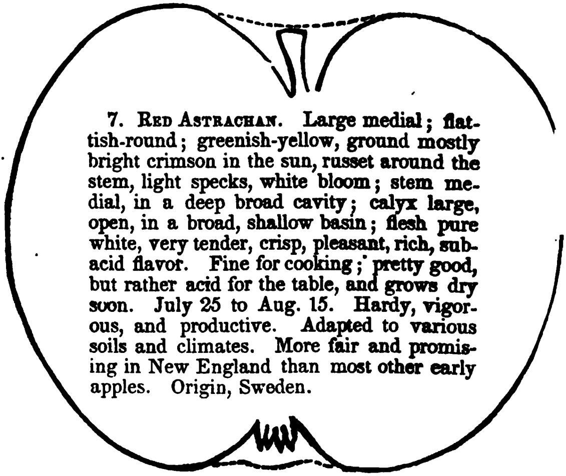
2. **EARLY HARVEST.** *Yellow Harvest.* Medial; flattish-round; yellow; tender, very juicy, of a brisk sub-acid flavor. Excellent for cooking and eating. 15th July to 10th Aug.; cracks and falls prematurely. In the Middle States, and some parts of the West, it is the finest very early apple. It is fine here in a very few favorable locations, but often fails under good culture where Red Astrachan looks fine.

3. SUMMER SWEET. Medial; roundish; clear yellow;
e, pleasant sweet apple, and a great favorite in many
tions of O. From Ct. Hovey thinks it is the High Top
eeting of Plymouth Co., Ms. July 20 to Aug. 10.

4. RED SHROPSHIREVINE. Medial; roundish; dull red; ten-
, rather dry, mild, aromatic. July 25 to Aug. 15. The
kills the bark, and the fruit falls and rots quickly. It does
farther North; good grower. Foreign.

. STRIPED SHROPSHIREVINE, *Curtis's Early Stripe.* Small;
-conical; pale yellow, striped with bright red; crisp,
and pleasant. July 25 to Aug. 15. Too small for
A poor scraggy grower.

6. River. Medial; flattish; yellow, much red in stripes; tender, juicy; pleasant sub-acid. Fine cooking and eating. Last of July and into Aug. Good grower; poor bearer. Cracks, blasts, and falls. Sometimes very good.

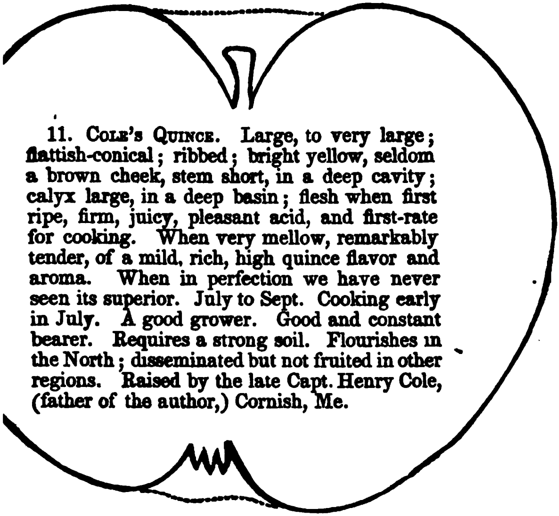


7. Red Astrachan. Large medial; flattish-round; greenish-yellow, ground mostly bright crimson in the sun, russet around the stem, light specks, white bloom; stem medial, in a deep broad cavity; calyx large, open, in a broad, shallow basin; flesh pure white, very tender, crisp, pleasant, rich, sub-acid flavor. Fine for cooking; pretty good, but rather acid for the table, and grows dry soon. July 25 to Aug. 15. Hardy, vigorous, and productive. Adapted to various soils and climates. More fair and promising in New England than most other early apples. Origin, Sweden.

8. Early Red Margaret, *Red Juneating*. Rather small; roundish-ovate; greenish yellow, striped with dark red; stem short, stout; calyx in a shallow basin; flesh white, rather acid, pleasant. Last of July and first of Aug. Moderate bearer. English origin.

9. Tucker. Large medial; flattish-round;
low, crisp, juicy, acid. Excellent for cooking.
Aug. 20. Great grower, good bearer. East B

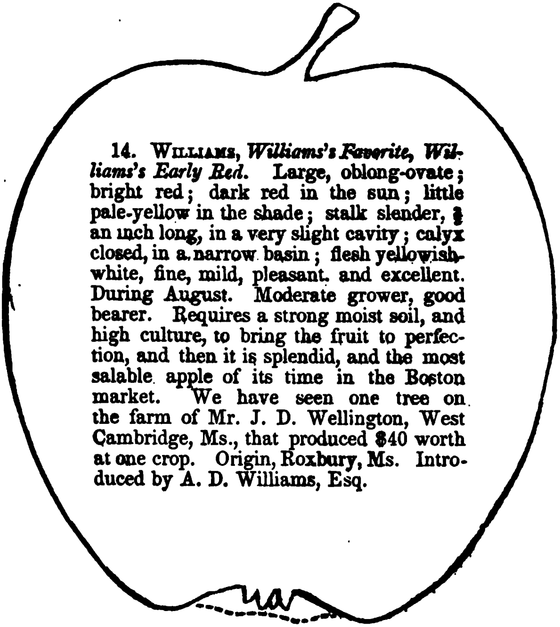
10. Red Quarrenden, *Devonshire Quarrenden*.
dial; flattish-round; deep crimson in the sun, gr
in the shade; flesh crisp, juicy, sub-acid, and
15 to last Sept Popular in some sections.



11. **Cole's Quince.** Large, to very large; flattish-conical; ribbed; bright yellow, seldom a brown cheek, stem short, in a deep cavity; calyx large, in a deep basin; flesh when first ripe, firm, juicy, pleasant acid, and first-rate for cooking. When very mellow, remarkably tender, of a mild, rich, high quince flavor and aroma. When in perfection we have never seen its superior. July to Sept. Cooking early in July. A good grower. Good and constant bearer. Requires a strong soil. Flourishes in the North; disseminated but not fruited in other regions. Raised by the late Capt. Henry Cole, (father of the author,) Cornish, Me.

12. **Bevan**, *Bevan's Favorite.* Medial; flattish; yellow, triped with bright red; flesh white, juicy, crisp, sprightly, ery pleasant; similar to Summer Pearmain, and twice as roductive. Last of July and Aug. Very vigorous, great earer. Kirtland says, one of the best early apples. We are ndebted to Samuel Reeves, Esq., a distinguished fruit-grow- r, of Salem, N. J., the place of its origin, for an account of his new fruit.

13. **Sweet Bough**, *August Sweeting, Bough, Yellow Bough.* [illegible] conical; smooth, greenish-yellow; stem [illegible] deep narrow cavity; calyx medial, deeply [illegible] whitish, very tender, juicy, of a rich, sprightly, [illegible] flavor. During Aug. Good grower, good and bearer. Throughout the country the best early [illegible] le known. Hardy, and adapted to various climates Native.

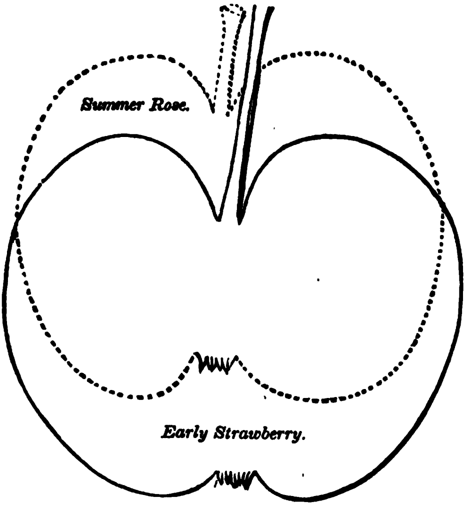


14. **Williams**, *Williams's Favorite, Williams's Early Red.* Large, oblong-ovate; bright red; dark red in the sun; little pale-yellow in the shade; stalk slender, ¾ an inch long, in a very slight cavity; calyx closed, in a narrow basin; flesh yellowish-white, fine, mild, pleasant, and excellent. During August. Moderate grower, good bearer. Requires a strong moist soil, and high culture, to bring the fruit to perfection, and then it is splendid, and the most salable apple of its time in the Boston market. We have seen one tree on the farm of Mr. J. D. Wellington, West Cambridge, Ms., that produced $40 worth at one crop. Origin, Roxbury, Ms. Introduced by A. D. Williams, Esq.

15. **Foundling**, *Groton, Shirley.* Large; flattish-round; ribbed; greenish-yellow, mostly covered with bright red; stem medial, very deeply sunken; calyx large, open, in a narrow, very deep basin; flesh yellowish-white, quite juicy, of a sprightly, sub-acid, aromatic flavor. Aug. and Sept. Moderate grower, good bearer. One of the handsomest and best. New. Origin, Groton.

16. **Oslin**. Rather small; flattish; greenish yellow; flesh firm, crisp, of a spicy, aromatic flavor. Aug. Scotch.

17. **SUMMER ROSE.** Small; roundish; pale yellow, striped [illegible] marbled with red; tender, sprightly, pleasant flavor. [illegible]er than Early Harvest; smaller and less productive. [illegible]dapted to the private garden, for which it is fine. Aug.



18. **EARLY STRAWBERRY**, *Red Juneating*, falsely *Am. Red [illegible]neating.* Small; roundish, conical; smooth, yellowish-[illegible]hite ground, nearly covered with brilliant red; stem long, [illegible] deep cavity; small basin; flesh white, tinged with [illegible] the skin; very tender, of a slight acid, sprightly, [illegible] flavor. Aug. Moderate grower, good bearer. Much [illegible]ed in N. Y. Rather small for the market. Origin, [illegible] Y. city.

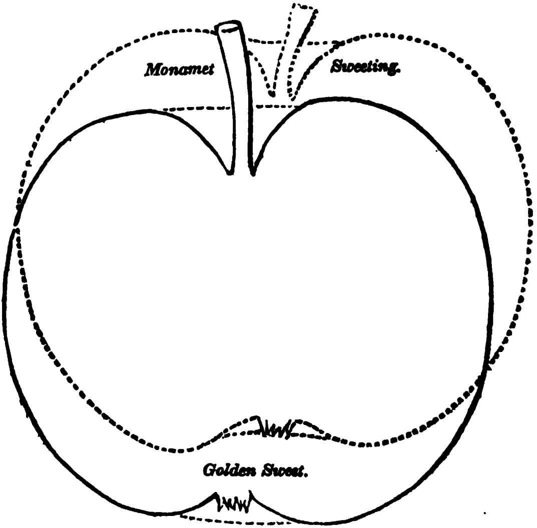
19. **BENONI.** Medial; roundish; deep bright red; stem [illegible] der, deep narrow cavity; calyx open, in a deep, [illegible] : flesh yellow, tender, crisp, juicy, of a [illegible] exc[illegible]t flavor. Aug. 10 to Sept. 10. [illegible] [illegible]ittle apt to blast. First-rate

better for the private garden; small for market. Wight says one of the best. Origin, Dedham, Ms.

20. DUTCHESS OF OLDENBURGH. Medial; roundish; yellow; red stripes; faint bloom; tender, juicy, sprightly acid flavor. Excellent only for cooking. Last of Aug. and 1st of Sept. Origin, Russia.

21. SPICE SWEET. Large; flat; smooth, pale yellow; very tender, sweet, and excellent. 15 Aug. into Sept. Origin, farm of Mr. Jacob Deane, a noted fruit-grower of Mansfield, Ms.

22. MONAMET SWEETING. Large medial; flattish; yellow ground, mostly bright, unbroken red, russet around the stem and on the base; stem medial, deep cavity; calyx large, in narrow basin; flesh whitish, tender, rich, and very sweet. 20 Aug. to 10 Sept. Origin, Plymouth, Ms. New.



23. GOLDEN SWEET, *Orange Sweet*. Large medial; round; pale yellow; stem an inch, rather slender, in a narrow, deep

cavity; calyx closed, in medial cavity; flesh tender, of very sweet, rich, and excellent flavor. Latter part of Aug. and Sept. A good grower and great bearer. Origin, Ct. There has long been known in N. England another Orange Sweet, larger, roundish conical, yellow, ripens same time; excellent, but poor bearer.

24. Sine-Qua-Non. Medial; roundish-ovate; greenish-yellow; very tender; juicy, sprightly, sub-acid, and excellent flavor; slow, poor grower, good bearer. 20th to last of Aug. First-rate. Origin, Long Island.

25. Summer Queen. Large medial; flattish conical; yellow, striped with red; tender, crisp, lively aromatic flavor. Latter part of Aug. Excellent for cooking; pretty good for the table. Best on sandy soil.

26. Sops of Wine. Small; flattish-conical; crimson, darker in the sun; crisp, juicy, pleasant, sub-acid. Last of Aug. and Sept. Beautiful, but neither excellent nor profitable. Foreign.

27. Belzer. Medial; flattish-round; yellow, striped with red; flesh white, fine, tender, juicy, sub-acid, and good. Aug. 1st to 15th, in Ohio. Here, about last of Aug. Origin, Ohio. From F. S. Humrickhouse, Coshocton Co., O., in Hovey's Magazine.

28. American Summer Pearmain, *Early Summer Pearmain*, *Summer Pearmain*. Medial; roundish; yellow, mostly marked with red; stem an inch long, in a deep cavity; calyx large, open; flesh very fine, tender, rich, aromatic. First quality. Last of Aug. and Sept. Adapted to light soils. Slow grower, moderate bearer, apt to crack. Popular in some parts of N. J., and the West. Kirtland says, "first-rate." Origin, N. J. This is the true. Another apple called by this name is similar in quality, more flat, more vigorous, earlier, which may be the Bevan.

## Fall Apples.

*Early Fall* Apples here, to which our time of maturity applies, are *late summer* apples in the latitude of N. J., Pa., O., Ia., Ill., &c.

29. Richardson. Large; roundish, inclini [illegible] o conical; smooth; green, mostly covered with red, bri [illegible] the sun, numerous large light specks; stem two thi [illegible] long, rather stout, in a broad, deep cavity; caly [illegible] narrow, deep basin; flesh greenish-white, [illegible]

juicy, of a rich, delicious, and almost saccharine flavor. Good specimens are of the highest order. Those in the shade want character. We find this to be a good grower, and the original tree, on the farm of Mr. Ebenezer Richardson, Pepperell, Ms., is called a good bearer. Last of Aug. and Sept.

30. SUMMER BELLFLOWER. Rather large; roundish-oblong; clear yellow, rarely a faint orange blush; stem an inch long, stout at the lower end, in a shallow cavity; calyx closed, in a slightly five-sided basin; flesh white, fine, tender, of an excellent, rich, sub-acid flavor, of the first quality. A rapid grower and good bearer. Downing, whom we copy, thinks it is of superior flavor to Porter or Williams. Last of Aug. to last of Sept. By Mr. John R. Comstock, Washington, N. Y., from a seed of Esopus Spitzenberg.

31. BARS. Rather large; round; pale yellow ground; marbled and nearly covered with red; few russety spots; stem long, slender, in a narrow, deep cavity; calyx large, open, in a broad, shallow furrowed basin; flesh whitish, remarkably tender, almost melting, juicy, of a rich, mild, pleasant flavor. Aug. 25 to Sept. 20. We find it perfectly hardy in Maine, very vigorous, and great and constant bearer. The original tree (in Greenwich, R. I.) is 7 feet round, and bore 60 bushels in one year. Not well tested elsewhere.

32. GRAND SACHEM. Very large; roundish-flat; dark red; flesh white, coarse, dry, poor. Sept.

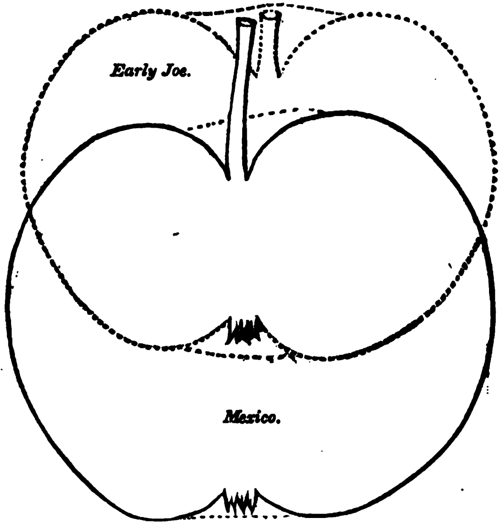
33. LYMAN'S LARGE SUMMER. Very large; flattish-round; pale yellow; tender, sub-acid, rich, high flavor. Sept. Moderate bearer. By S. Lyman, Manchester, Ct.

34. WINTHROP GREENING, *Lincoln Pippin, Howe* Apple. Large; golden yellow, with slight russet, tinge of red in the sun; flesh tender, crisp, very juicy, of a sprightly, mildly tart, luscious flavor. Sept. Origin, Winthrop, Me.

35. EARLY PENNOCK. Very large; flattish-conical; red, with a little pale yellow; stem very short, stout, in a very large cavity; basin large; flesh yellow, of a fine, sub-acid flavor. Second rate eating, excellent for cooking. Rather popular in some parts of the West. Sept. Subject to bitter rot in moist locations.

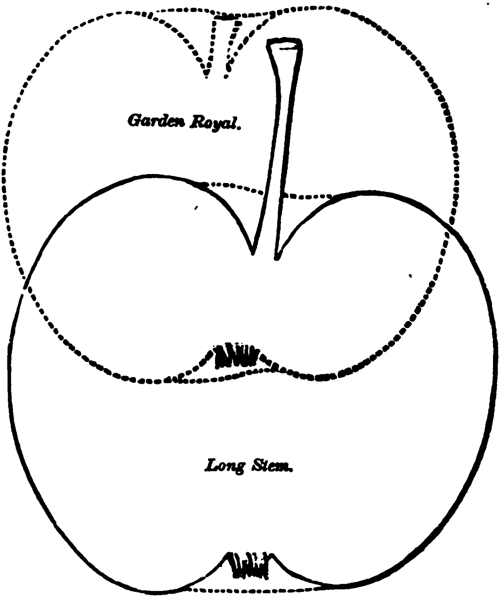
36. ST. LAWRENCE. Large; flat; pale yellow, mostly deep red, and crimson stripes. Good for cooking, poor for the table. Salable for its large size and beauty. Sept. Vigorous and productive.

37. **Early Joe.** Small; flattish round; smooth, bright red on a pale yellow ground, covered with bloom; stalk short, slim, in a broad, deep cavity; calyx small, closed, in a shallow basin; flesh white, melting, and very tender, of a very fine, high aromatic flavor. One of the very best and most beautiful; but good only when eaten from the tree. During Sept. We find it to be only a moderate grower, and a great bearer. Origin, Bloomfield, N. Y.



38. **Mexico.** Medial; roundish; bright crimson, clouded and striped with very dark red, a little yellow in the shade; few large light dots; stem rather long and stout, in a broad, rather shallow, russety cavity; calyx rather large, in a narrow basin; flesh whitish, tinged with red; tender, rather juicy, of a fine high flavor. We find it a moderate grower; perfectly hardy even in Maine. A good bearer, very handsome, excellent fruit. Sept. Origin, Canterbury, Ct.

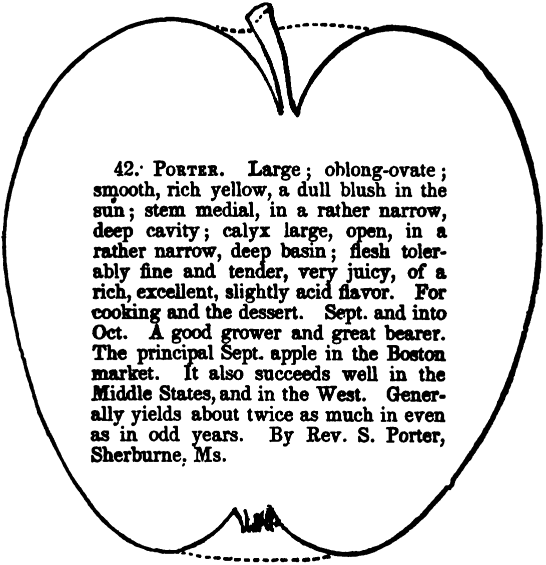
39. **Garden Royal.** Small; roundish-flat; dull, greenish, russety yellow, mostly covered with dull, deep red in the sun, numerous large, light specks; stem short, slender, in a medial cavity; calyx medial, open, in a broad, shallow basin; flesh very fine, tender, almost melting, crisp, of a delicious, highly aromatic flavor. Nothing superior. Sept. Moderate grower and great bearer. Fine for the private garden. Rather small for market.



40. **Long Stem.** Large medial; flattish-round; pale yellow, brown full in the sun; dark specks and patches; stem extremely long, slender, in a broad, deep cavity; calyx large, rather open, in a broad, shallow basin; flesh white, rather

tender, juicy, of a rich, mild, delicious, sprightly, aromatic flavor. First-rate for the dessert or cooking. Sept. 1st, to the last of Oct. Good and constant bearer. Origin, East Bridgewater, Ms.

41. **Superb Sweet.** Rather large; roundish; pale yellow, much red, bright in the sun; stem long, in a deep cavity; calyx large, open, in a broad basin; flesh white, very tender, juicy, of a sweet, rich, high flavor. Hardy in Maine; great grower, and good bearer. One of the best. Sept., and into Oct. Raised by Mr. Jacob Deane, Mansfield, Ms., a distinguished fruit-grower.

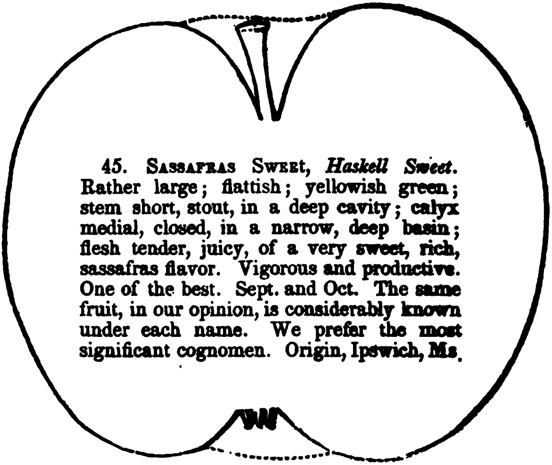


42. **Porter.** Large; oblong-ovate; smooth, rich yellow, a dull blush in the sun; stem medial, in a rather narrow, deep cavity; calyx large, open, in a rather narrow, deep basin; flesh tolerably fine and tender, very juicy, of a rich, excellent, slightly acid flavor. For cooking and the dessert. Sept. and into Oct. A good grower and great bearer. The principal Sept. apple in the Boston market. It also succeeds well in the Middle States, and in the West. Generally yields about twice as much in even as in odd years. By Rev. S. Porter, Sherburne, Ms.

43. **Tufts's Baldwin.** Very large; flattish-conical. ribb smooth, fair, yellowish-green, mostly covered with r

dark, unbroken red; stem rather short, in a broad, deep cavity; calyx small, closed, in a narrow, deep basin; flesh rather coarse, yellowish, crisp, pleasant sub-acid. Resembles the Baldwin in quality. Very salable from its noble and fine appearance, but not first-rate for the table. Sept. and Oct.

44. **Fairbanks.** Medial; flattish-round-conical; light yellow, stripes of dull red, and russet patches; stem long, slender, in a broad, shallow cavity; basin shallow; flesh yellowish, fine, juicy, of an excellent flavor, blending saccharine with sub-acid. Sept. and into Oct. Much esteemed in the region of its origin. Farm of the late Mr. T. E. Fairbanks, Winthrop, *Me. P. Society.*



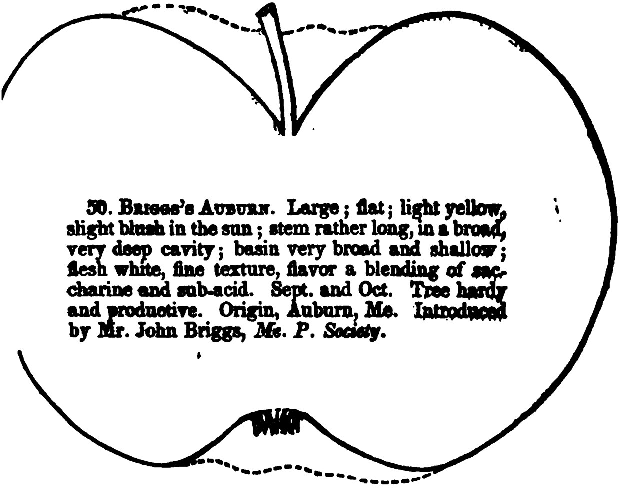
45. **Sassafras Sweet,** *Haskell Sweet.* Rather large; flattish; yellowish green; stem short, stout, in a deep cavity; calyx medial, closed, in a narrow, deep basin; flesh tender, juicy, of a very sweet, rich, sassafras flavor. Vigorous and productive. One of the best. Sept. and Oct. The same fruit, in our opinion, is considerably known under each name. We prefer the most significant cognomen. Origin, Ipswich, Ms.

46. **Wine,** of East N. J., and of Deane, of Mansfield, Ms. Medial; flat; very smooth and fair, rich, dark bright red; flesh yellow, crisp, pleasant, and vinous. Sept. and Oct.; [illegible] wer, of a dwarfish habit, which, with the beautiful [illegible] ly ornamental, and adapted to the garden.

47. **Fall Wine.** In O. Fruit Convention, considered one of the best in its season. Sept. and Oct. We have no description.

48. **Summer Sweet Paradise.** Very large; flattish-round; pale green, yellowish in the sun, large dark dots; stalk large, in a cavity of medial depth; flesh tender, very juicy, crisp, of a sweet, rich, aromatic flavor. Sept. and Oct. Great grower, and abundant bearer. One of the finest. By J. B. Garber, Esq., Columbia, Pa.

49. **Lowell,** *Pound Royal, Orange, Queen Anne, Tallow.* Large; oblong-ovate; oily, pale yellow; tender, and nearly first-rate. Sept. and Oct. Good grower, great bearer. Raised in Western N. Y. and O.



50. **Briggs's Auburn.** Large; flat; light yellow, slight blush in the sun; stem rather long, in a broad, very deep cavity; basin very broad and shallow; flesh white, fine texture, flavor a blending of saccharine and sub-acid. Sept. and Oct. Tree hardy and productive. Origin, Auburn, Me. Introduced by Mr. John Briggs, *Me. P. Society.*

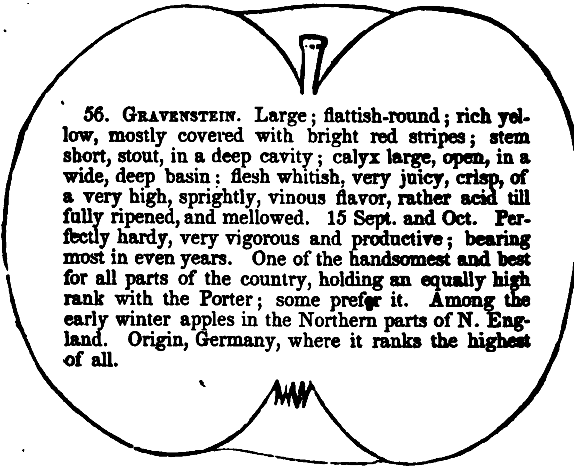
51. **Dutch Codlin.** Very large; roundish, ribbed; pale yellow, orange in the sun; stem short, thick; basin narrow, deeply furrowed; crisp, juicy, acid. For cooking only. Last Sept. and Oct. Foreign.

52. **Boxford.** Medial; flat; yellow, red striped; tender, pleasant; but transient, and lacks character. Sept. and Oct.

53. **Moses Wood.** Medial; roundish; straw color, beautifully striped with red; cavity and basin shallow; flesh white, tender, juicy, of a pleasant, sub-acid flavor. Sept. and Oct. Productive; orchard of Mr. Moses Wood, Winthrop, Me. *Ms. P. Society.*

54. **Jersey Sweeting.** Small medial; roundish-ovate; greenish-yellow, nearly covered with pale red; fine texture, tender, very sweet, juicy, and sprightly. Sept. and Oct. Fine for table, for cooking, and for stock. Productive. It ranks high in the Middle and Western States; but little known here.

55. **Holland Pippin.** Very large; rather flat; greenish, a dull blush; rather coarse and acid. For cooking. Sept. and Oct. Often confounded with Fall Pippin, which is much superior.



56. **Gravenstein.** Large; flattish-round; rich yellow, mostly covered with bright red stripes; stem short, stout, in a deep cavity; calyx large, open, in a wide, deep basin; flesh whitish, very juicy, crisp, of a very high, sprightly, vinous flavor, rather acid till fully ripened, and mellowed. 15 Sept. and Oct. Perfectly hardy, very vigorous and productive; bearing most in even years. One of the handsomest and best for all parts of the country, holding an equally high rank with the Porter; some prefer it. Among the early winter apples in the Northern parts of N. England. Origin, Germany, where it ranks the highest of all.

57. **Leland Pippin,** *Leland Spice, and New York Spice.* La ; roundish; yellow ground, nearly covered with bright stem short, in a narrow cavity; calyx small, in a shal- basin; flesh yellowish, rather tender, juicy, of a very

rich, high aromatic sub-acid flavor. Excellent for eating and cooking, but too acid for many. 15 Sept. and Oct. Very vigorous and productive, and the fruit handsome and salable. Dea. Daniel Leland, of Sherburne, Ms., has long cultivated it, and he thinks the original tree was imported long since.

58. FALL STRAWBERRY, *Late Strawberry*. Medial; roundish; slightly conical; light and dark red; flesh whitish, very tender, juicy, of a fine, pleasant, slightly acid flavor. Middle Sept. and Oct. Vigorous and good bearer. Thomas says, one of the finest of all table fruits. Origin, Western N. Y.

59. WESTON. Large; roundish-conical; yellow, mostly covered with red; flesh whitish, tolerably juicy, of a mild, pleasant flavor. Last Sept. and Oct. Moderate grower, great bearer. Origin, farm of Maj. Daniel Weston, Lincoln, Ms. New.

60. POMME ROYALE, *Smithfield Spice, Dyer*. Medial; roundish; greenish pale yellow, with a faint blush; very tender, juicy, of a mild, pleasant, sprightly flavor. Last Sept. and Oct. Cultivated a little in R. I. Popular in Northern Ohio. Supposed of French origin.

61. LYSCOM, *Osgood's Favorite*. Large; round; greenish pale yellow, striped with bright crimson; stem short, in a deep cavity; calyx large, in a narrow plaited basin; flesh fine, tender, mild, pleasant. Last Sept. into Nov. Wanting flavor, yet salable from its size, beauty, mildness, and tenderness. Moderate grower, and moderate or good bearer. Origin, Southboro', Ms.

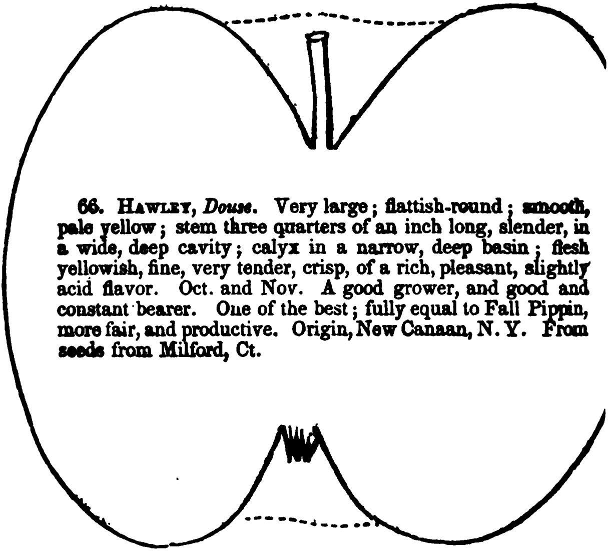
62. BEAUTY OF THE WEST. Large; round; greenish yellow, stripes of red; tender, sweet, second-rate. Fall.

63. CHAPMAN'S ORANGE. Small medial; deep orange; fine, juicy, very high flavor; first-rate. October. *Michigan Farmer*.

64. WINTHROP PEARMAIN. Large; roundish-ovate; straw color, striped with red, deep red in the sun; stem medial, in a rather deep and broad cavity; shallow basin; flesh white, fine, juicy, of a pleasant spicy flavor. Last Sept. to Nov. Constant bearer. Orchard of Col. J. Fairbanks, Winthrop, Me. *Me. P. Society*.

65. MAGNOLIA. Large, medial; flattish-conical; stem short, stout, in a broad, deep, wavy cavity; calyx small, closed, in a narrow shallow basin; greenish pale yellow, half covered and beautifully mottled with red, with brilliant

crimson stripes in the sun; flesh white, very tender, juicy, of a mild, sprightly aromatic flavor. Oct. and to middle of Nov. Good grower, and great bearer. One of the most beautiful and best of apples, excepting some in the shade lack character. Origin, Bolton, Ms.



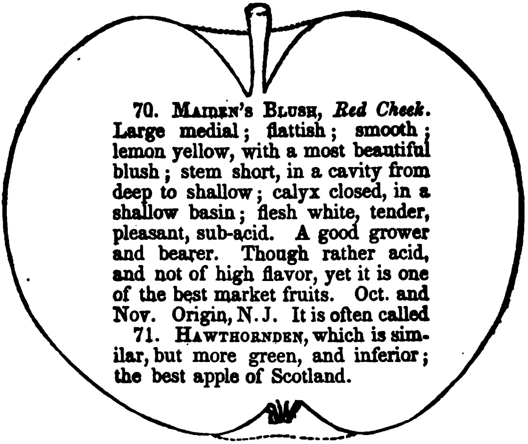
66. Hawley, *Douse*. Very large; flattish-round; smooth, pale yellow; stem three quarters of an inch long, slender, in a wide, deep cavity; calyx in a narrow, deep basin; flesh yellowish, fine, very tender, crisp, of a rich, pleasant, slightly acid flavor. Oct. and Nov. A good grower, and good and constant bearer. One of the best; fully equal to Fall Pippin, more fair, and productive. Origin, New Canaan, N. Y. From seeds from Milford, Ct.

67. Thompkins. Large, handsome and productive. Oct. and Nov. Downing, in his Horticulturist, commends it with confidence, and says, the flavor is superior to the Porter, and nearly equal to the Fall Pippin.

68. Jewett's Red, *Nodhead*. Medial; flattish-round; bright dark red, very little greenish yellow; very short stem, in a very shallow cavity; small calyx in a slight basin; flesh yellowish, remarkably tender, almost melting, like a fine [illegible]; mild, approaching to saccharine, of a delicious, aro-

matic flavor. For the dessert only. Oct. and Nov. A good grower till it begins to bear; a good bearer. Adapted to the North. Requires a good soil and high culture, else the fruit will not be fair. Origin, Hollis, N. H. Much cultivated in that State and Me. It is beautiful and of the first quality.

69. **Hubbardston Nonsuch.** (*See engraving, page* 1.) Large to very large; roundish; yellow, mostly covered with red, which is bright in the sun; lower part of the cavity and basin, greenish russet, numerous dark specks; stem two thirds of an inch long, in a broad, deep cavity; calyx rather large, open, in a broad basin; flesh yellowish-white, tender, crisp, of a very mild, excellent aromatic flavor, rather saccharine. Oct. and Nov. A good grower and good bearer, mostly in even years. Very popular in the market. Origin, Hubbardston, Ms.



70. **Maiden's Blush,** *Red Cheek.* Large medial; flattish; smooth; lemon yellow, with a most beautiful blush; stem short, in a cavity from deep to shallow; calyx closed, in a shallow basin; flesh white, tender, pleasant, sub-acid. A good grower and bearer. Though rather acid, and not of high flavor, yet it is one of the best market fruits. Oct. and Nov. Origin, N. J. It is often called

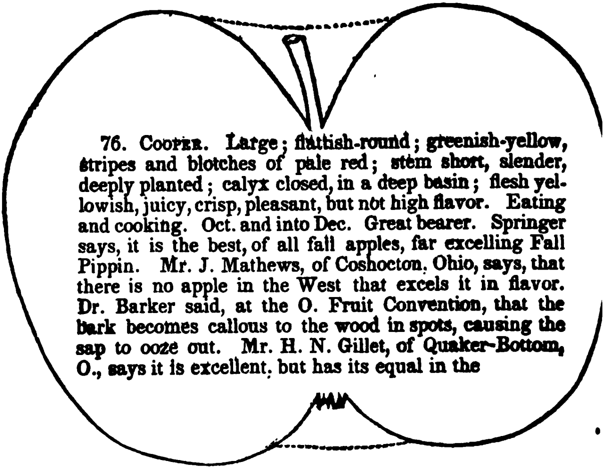
71. **Hawthornden,** which is similar, but more green, and inferior; the best apple of Scotland.

72. **Ram's Horns.** A most beautiful, large, dark-red apple, that makes a conspicuous appearance in our market in Oct. and Nov. Middling quality, apt to be knotty; yet some say that it is productive and profitable, as it sells well

73. Queen Anne. Large; oblong; crimson; pleasant sub-acid. Very salable, but poor bearer. Oct. and Nov. The Queen Anne, or Lowell, of Ohio, is yellow, and earlier.

74. Beauty of Kent. Magnificent and beautiful; for cooking only. Oct. and Nov. Foreign.

75. Holden Pippin, *Hogpen, Jones's Pippin.* Large; roundish-oblong; greenish pale yellow, occasionally a brownish cheek, numerous large dark dots over the whole surface; stem short, in a very deep cavity; calyx large, rather open, in a narrow, rather deep basin; flesh white, remarkably tender, juicy, of a pleasant, sub-acid flavor. First-rate for cooking, and good for eating, but rather acid for some palates. Oct. and Nov. Vigorous and great bearer. Origin, Holden, Ms.



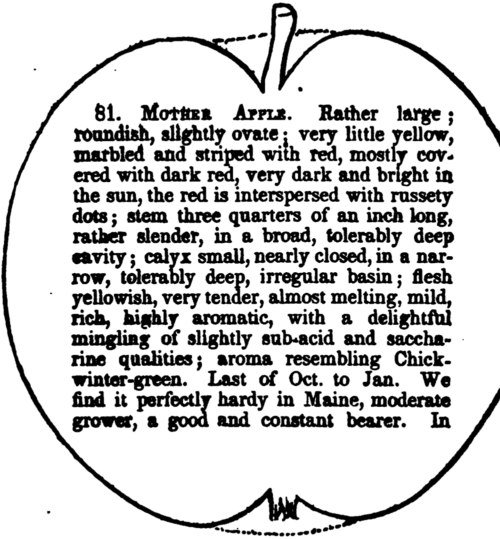
76. Cooper. Large; flattish-round; greenish-yellow, stripes and blotches of pale red; stem short, slender, deeply planted; calyx closed, in a deep basin; flesh yellowish, juicy, crisp, pleasant, but not high flavor. Eating and cooking. Oct. and into Dec. Great bearer. Springer says, it is the best, of all fall apples, far excelling Fall Pippin. Mr. J. Mathews, of Coshocton, Ohio, says, that there is no apple in the West that excels it in flavor. Dr. Barker said, at the O. Fruit Convention, that the bark becomes callous to the wood in spots, causing the sap to ooze out. Mr. H. N. Gillet, of Quaker-Bottom, O., says it is excellent, but has its equal in the Long Pearmain, which ripens at the same time, and excels it in size and flavor.

78. Ross Nonpareil. Small medial; roundish, slightly o s; russet, faint red in the sun; tender, of a rich,

aromatic, fennel flavor. Nov. Great bearer. Origin, Ireland.

79. QUINCE of Coxe. Large; flattish; yellow; flesh yellowish, juicy, crisp, of a very pleasant flavor. Nov. A fine fruit, yet but little known.

80. PUMPKIN SWEET, *Pumpkin Russet*. Large; flattish; yellowish, with some russet; very rich and sweet. Oct. to Dec. Good grower, moderate bearer. A great many kinds of apples, resembling pumpkins in size, and often inferior in quality, are called *Pumpkin Sweet*.



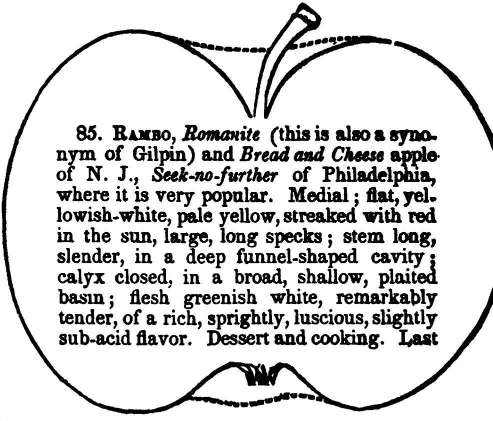
81. MOTHER APPLE. Rather large; roundish, slightly ovate; very little yellow, marbled and striped with red, mostly covered with dark red, very dark and bright in the sun, the red is interspersed with russety dots; stem three quarters of an inch long, rather slender, in a broad, tolerably deep cavity; calyx small, nearly closed, in a narrow, tolerably deep, irregular basin; flesh yellowish, very tender, almost melting, mild, rich, highly aromatic, with a delightful mingling of slightly sub-acid and saccharine qualities; aroma resembling Chick-winter-green. Last of Oct. to Jan. We find it perfectly hardy in Maine, moderate grower, a good and constant bearer. In quality it has no superior, and very few equals. Origin, Bolton, Ms.

82. DETROIT, *Red Detroit*, *Crimson Pippin*. Large; roundish-flat, slightly conical; smooth, glossy, dark crimson purple, with a little fawn color; stem medial, in a deep cavity;

calyx closed, in a deep plaited basin; flesh white, tinged with red, very tender, mild, and pleasant, but not excellent. Oct. and into Dec. Slow grower, good bearer. Too soft for transportation. Salable from its handsome appearance, and medial quality.

83. **Male Carle.** Medial; common apple shape; smooth, lemon color, crimson in the sun; flesh white, not juicy, of a delicate, rose-perfumed flavor. Oct. to Jan. Adapted to the southern region of the Middle and Western States, and further South. The first apple in Italy, and popular in the South of Europe.

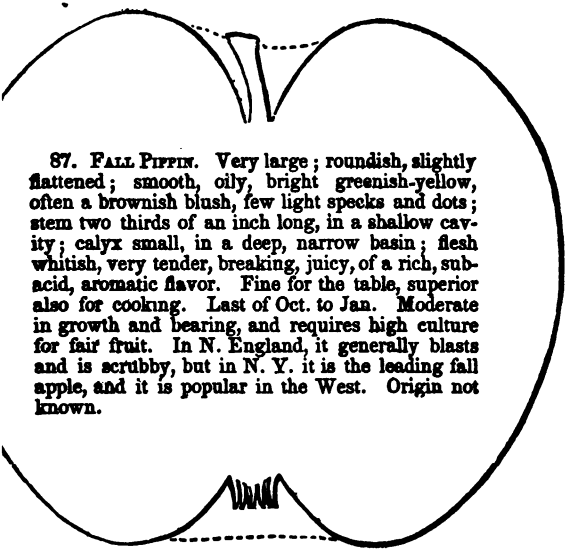
84. **Seek-no-further.** This is a vague term, being about as definite as pippin or apple. In N. J. and Pa. it is applied to the Rambo, in N. Y. to Domine. The Seek-no-further of Coxe is large; roundish, inclining to conical; greenish pale yellow; juicy, rich, tender, and excellent. Last of Oct. to Jan. Popular in some parts of the West. In this region there is a Seek-no-further; small, oblong; bright, excellent, but rather small for market. There are a great many other kinds under this name.



85. **Rambo,** *Romanite* (this is also a synonym of Gilpin) and *Bread and Cheese* apple of N. J., *Seek-no-further* of Philadelphia, where it is very popular. Medial; flat, yellowish-white, pale yellow, streaked with red in the sun, large, long specks; stem long, slender, in a deep funnel-shaped cavity; calyx closed, in a broad, shallow, plaited basin; flesh greenish white, remarkably tender, of a rich, sprightly, luscious, slightly sub-acid flavor. Dessert and cooking. Last of Oct. to Jan. Adapted to light soils. One of the finest in the Middle States and the West, but does not bear extending

r South of its origin, Beaver Co., Pa. Moderate wer. Good bearer.

LL HARVEY, *Oaks Apple* perhaps. Large; flattish, ly ribbed; pale straw color, seldom a brownish cheek; hort, in a deep, wide cavity; calyx small, closed, in a basin; crisp, juicy, of a rich, pleasant flavor. Nov. c. Good grower and bearer; fine, fair fruit, but not me, and rather apt to fall, or to rot on the tree. Re- deep sandy loam. Origin, Essex Co., Ms. It is not d whether the Oaks is this apple, and superior from r a distinct yet similar kind.

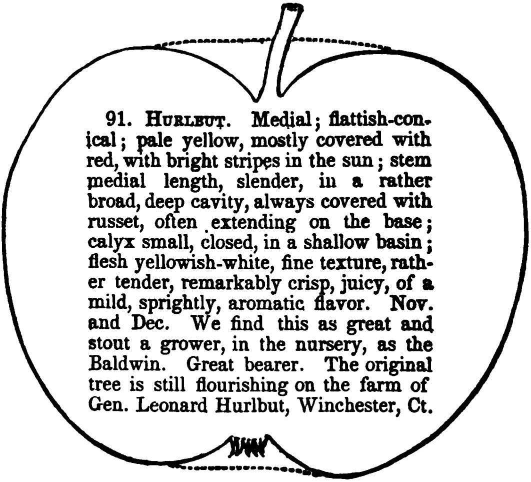


87. FALL PIPPIN. Very large; roundish, slightly flattened; smooth, oily, bright greenish-yellow, often a brownish blush, few light specks and dots; stem two thirds of an inch long, in a shallow cavity; calyx small, in a deep, narrow basin; flesh whitish, very tender, breaking, juicy, of a rich, subacid, aromatic flavor. Fine for the table, superior also for cooking. Last of Oct. to Jan. Moderate in growth and bearing, and requires high culture for fair fruit. In N. England, it generally blasts and is scrubby, but in N. Y. it is the leading fall apple, and it is popular in the West. Origin not known.

CABASHEA. Very large; roundish: greenish-yellow, red; coarse, poor quality. Western N. Y. Nov. Inferior to 20 Ounce.

89. **Alexander.** Extremely large; flattish-conical; greenish-yellow and red, in the sun bright red and a little orange; stalk short, slender, deep cavity; calyx large, in a deep basin; crisp, tender, and pleasant. Wants flavor. Nov. and Dec. Moderate bearer. Foreign.

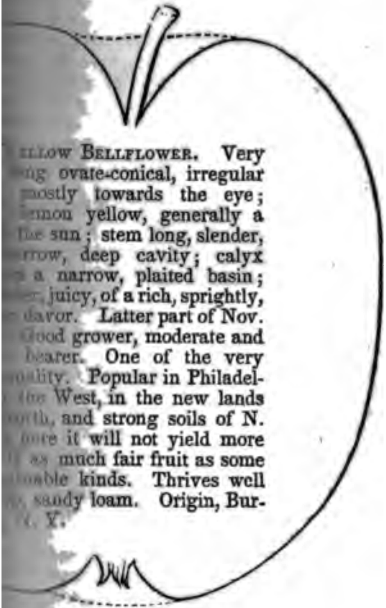
90. **Fameuse,** *Snow Apple, Pomme de Niege.* Small medial; roundish; greenish-yellow, mostly covered with red, bright in the sun; stem short, slender, in a funnel-shaped cavity; calyx small, in a small basin; flesh pure white, very tender, juicy, and pleasant. Nov. and Dec. Slow grower, good bearer. Best suited to a Northern region, or cool location. For the amateur or private garden, rather than the market, in this region. Origin, Canada, where it ranks as the first apple.



91. **Hurlbut.** Medial; flattish-conical; pale yellow, mostly covered with red, with bright stripes in the sun; stem medial length, slender, in a rather broad, deep cavity, always covered with russet, often extending on the base; calyx small, closed, in a shallow basin; flesh yellowish-white, fine texture, rather tender, remarkably crisp, juicy, of a mild, sprightly, aromatic flavor. Nov. and Dec. We find this as great and stout a grower, in the nursery, as the Baldwin. Great bearer. The original tree is still flourishing on the farm of Gen. Leonard Hurlbut, Winchester, Ct. It bore 40 bushels one year, and 20 the next. One of the finest in its season. For the dessert and kitchen.

92. **Ramsdell's Sweeting.** Large medial, or rather large; oblong, slightly ovate; dark red, with fawn-colored specks,

very short, in a narrow, deep cavity; a
yellowish, very tender, and mellow, and
and rich. Last of Oct. to Jan. Very vig-
nd constant bearer. Native of Ct., and
where.



LLOW BELLFLOWER. Very
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mostly towards the eye;
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the sun; stem long, slender,
rrow, deep cavity; calyx
a narrow, plaited basin;
juicy, of a rich, sprightly,
flavor. Latter part of Nov.
Good grower, moderate and
bearer. One of the very
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the West, in the new lands
rth, and strong soils of N.
ore it will not yield more
as much fair fruit as some
able kinds. Thrives well
sandy loam. Origin, Bur-
N. Y.

Large; roundish to oval; yellow and
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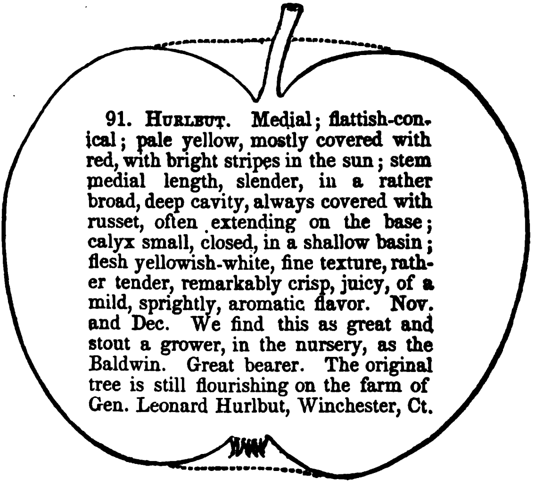
89. Alexander. Extremely large; flattish-conical; greenish-yellow and red, in the sun bright red and a little orange; stalk short, slender, deep cavity; calyx large, in a deep basin; crisp, tender, and pleasant. Wants flavor. Nov. and Dec. Moderate bearer. Foreign.

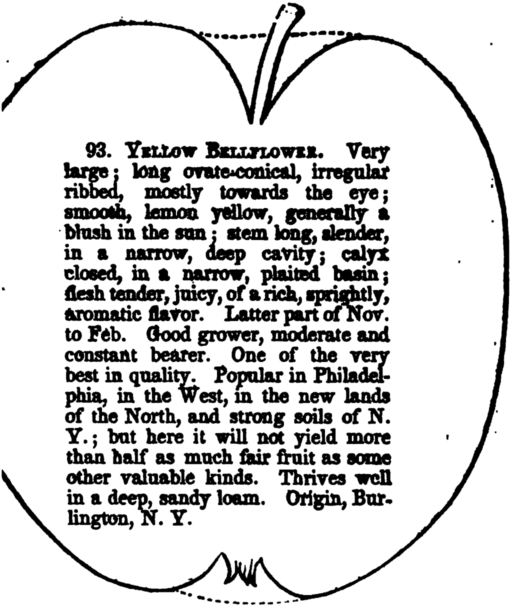
90. Fameuse, *Snow Apple, Pomme de Niege*. Small medial; roundish; greenish-yellow, mostly covered with red, bright in the sun; stem short, slender, in a funnel-shaped cavity; calyx small, in a small basin; flesh pure white, very tender, juicy, and pleasant. Nov. and Dec. Slow grower, good bearer. Best suited to a Northern region, or cool location. For the amateur or private garden, rather than the market, in this region. Origin, Canada, where it ranks as the first apple.



91. Hurlbut. Medial; flattish-conical; pale yellow, mostly covered with red, with bright stripes in the sun; stem medial length, slender, in a rather broad, deep cavity, always covered with russet, often extending on the base; calyx small, closed, in a shallow basin; flesh yellowish-white, fine texture, rather tender, remarkably crisp, juicy, of a mild, sprightly, aromatic flavor. Nov. and Dec. We find this as great and stout a grower, in the nursery, as the Baldwin. Great bearer. The original tree is still flourishing on the farm of Gen. Leonard Hurlbut, Winchester, Ct. It bore 40 bushels one year, and 20 the next. One of the finest in its season. For the dessert and kitchen.

92. Ramsdell's Sweeting. Large medial, or rather large; oblong, slightly ovate; dark red, with fawn-colored specks;

stem very short, in a narrow, deep cavity; a , flesh yellowish, very tender, and mellow, and y sweet and rich. Last of Oct. to Jan. Very vigorous and constant bearer. Native of Ct., and known elsewhere.



93. **Yellow Bellflower.** Very large; long ovate-conical, irregular ribbed, mostly towards the eye; smooth, lemon yellow, generally a blush in the sun; stem long, slender, in a narrow, deep cavity; calyx closed, in a narrow, plaited basin; flesh tender, juicy, of a rich, sprightly, aromatic flavor. Latter part of Nov. to Feb. Good grower, moderate and constant bearer. One of the very best in quality. Popular in Philadelphia, in the West, in the new lands of the North, and strong soils of N. Y.; but here it will not yield more than half as much fair fruit as some other valuable kinds. Thrives well in a deep, sandy loam. Origin, Burlington, N. Y.

**Eustis**, *Ben*. Large; roundish to oval; yellow and stem medial, slender, in a narrow cavity; calyx open, broad, narrow basin; flesh firm, crisp, mild, spicy flavor. to Jan. Good grower and bearer. Fruit salable, but rather hard, dryish, and not high flavor. Mother, Hurl-

104. CHANDLER. Large; roundish; pale yellow ground; mostly red; stalk short, in a wide cavity; calyx small, in a wide basin; flesh tender, juicy, rather rich, pleasant, sub-acid. Nov. to Feb. Moderate grower, great bearer. Popular in some parts of Ct., its origin.

105. PORTSMOUTH SWEET. Large; roundish-conical; yellow, striped with scarlet; sweet and excellent. Late fall and winter. We find this very vigorous. New, beautiful, and promising, but not well tested. Origin, Portsmouth, N. H.

106. HEREFORDSHIRE PEARMAIN, *Royal or Eng. Pearmain.* Medial; oblong-ovate; russety green, mottled with brownish red; stem half inch long, slender; calyx wide, in a narrow plaited basin; very tender, of a pleasant aromatic flavor. Late fall and winter. Good grower, moderate bearer. Dessert and cooking. Very popular in some parts of the Middle States. Foreign.

### WINTER AND SPRING APPLES.

*Early winter* apples, here, are *late fall* and *early winter* in the Southern part of the Middle States, and the same latitude West; and they are *winter* fruits in Me., N. H., Vt., &c.

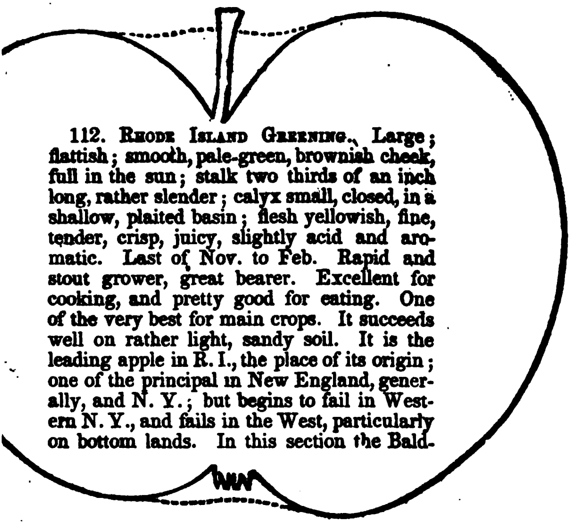
107. KING. Many of this name. An excellent kind in this market, from N. Y. Large; ovate; yellow, mostly red; tender, rich, mild, inclining to saccharine. Nov. to Jan. As good as the Wine apple, and as showy and better than the 20 Ounce. We have from Ellwanger and Barry, Rochester, N. Y., another KING. Rather large; roundish-conical; yellow, red in the sun; saccharine blended with sub-acid; excellent. Winter. Another KING, in Essex Co., Ms., size of Baldwin; form of Greening; bright red, very good; great bearer. Nov. and Dec. And others.

108. GLORIA MUNDI, *Monstrous Pippin.* Extremely large; flattish-round; lemon yellow, brownish in the sun; rather acid. For cooking only. Poor bearer. Last of Nov. to Jan.

109. VANDEVERE, *Oxeye of O.* Large; roundish; yellow ground, clouded and marbled with red, light gray specks; stem half an inch long, in a deep cavity; calyx medial, in a rather shallow basin; flesh yellow, tender, crisp, of a pleasant sprightly flavor. A great bearer. Beecher says, it often hits when others miss. It is a profitable fruit in N. Y., and in the West. Last of Nov. to mid winter. Requires light, rich, sandy soil, else it is liable to blast, and to bitter rot. Native of Wilmington, Del.

[illegible] e; flattish; yel- [illegible]; broad, shallow [illegible] rather [illegible] of [illegible] excellent sweet [illegible] and nearly through winter. Produc- [illegible] of Mr. Paul Bailey, Sidney, Me. *Me. Society.*

[illegible] **Stevens's Gilliflower.** Large; roundish-conical; [illegible] cavity and basin; dull whitish ground, striped with [illegible] flesh white, tender, pleasant, sub-acid. Last of Nov. [illegible] Good bearer. Raised by Mrs. Olive Stevens, Swe- [illegible]Me. *Me. P. Society.*

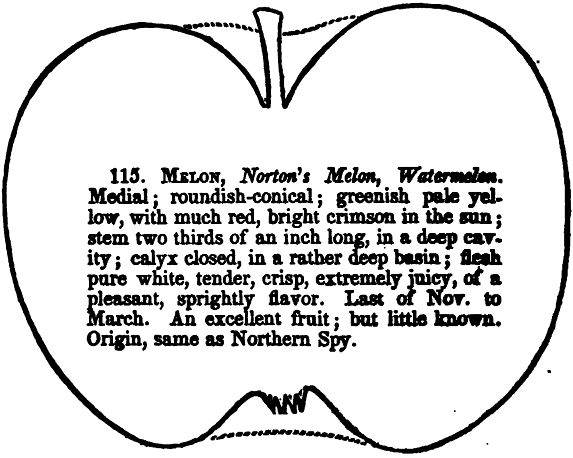


112. **Rhode Island Greening.** Large; flattish; smooth, pale-green, brownish cheek, full in the sun; stalk two thirds of an inch long, rather slender; calyx small, closed, in a shallow, plaited basin; flesh yellowish, fine, tender, crisp, juicy, slightly acid and aromatic. Last of Nov. to Feb. Rapid and stout grower, great bearer. Excellent for cooking, and pretty good for eating. One of the very best for main crops. It succeeds well on rather light, sandy soil. It is the leading apple in R. I., the place of its origin; one of the principal in New England, generally, and N. Y.; but begins to fail in Western N. Y., and fails in the West, particularly on bottom lands. In this section the Bald[illegible]re profitable for the market, but this is equally [illegible]or family use.

[illegible] **Jonathan.** Medial; roundish-ovate; light yellow, [illegible] covered with lively red, brilliant in the sun; stalk [illegible]

rather long, slender, in a deep cavity; calyx small, in a deep basin; flesh white, tender, juicy, of a mild, sprightly flavor. Last of Nov. to Feb. Very popular in some sections, but too small for market here. Thomas says, beautiful, excellent, and great bearer. Kirtland says, "preferable to Esopus Spitzenburg here." Origin, Kingston, N. Y.

114. Wells's Sweeting. Medial; roundish; dull green, a dull blush; stem short and slender; calyx small, in a shallow basin; flesh white, very tender, rich, sweet, and sprightly. Last of Nov. to Feb. A good bearer. Origin, near Newburgh, N. Y.



115. Melon, *Norton's Melon*, *Watermelon*. Medial; roundish-conical; greenish pale yellow, with much red, bright crimson in the sun; stem two thirds of an inch long, in a deep cavity; calyx closed, in a rather deep basin; flesh pure white, tender, crisp, extremely juicy, of a pleasant, sprightly flavor. Last of Nov. to March. An excellent fruit; but little known. Origin, same as Northern Spy.

116. Minister. Large; long-ovate; mostly red on yellow ground, bright red in the sun; stem an inch long, slender, in a broad, shallow cavity; calyx small, closed, in a very narrow, plaited basin; flesh yellowish-white, very tender, of a rather acid, but pleasant, pie apple flavor. Last of Nov. to March. Great grower, and enormous bearer, so that the fruit often needs thinning. With rough handling and exposure, this fruit rots from bruising, or ripens prematurely,

too acid; but carefully picked and saved in a cool o ripen late, it loses most of its acidity, and becomes ellent and most beautiful fruit. Needs a deep, sandy Origin, Essex Co., Ms.

PECK'S PLEASANT. Large; roundish-flat; clear yel- d in the sun; stem short, in a wide, wavy cavity; small, open, in a deep basin; flesh fine, firm, crisp, of an excellent, high, aromatic flavor. Early winter. ate grower and bearer. First-rate quality, resembling wn Pippin. Eaton says, "has been a great favorite ., but is going out of cultivation, as the fruit is defec- It is rather popular in Western N. Y. Elliott says, rate on gravelly or sandy soils." Here, it is defective. es new lands or very high culture.

KAIGHN'S SPITZENBERG. More pointed than the Eso- pale red, white specks; tender, juicy, fine flavor. winter. Nearly abandoned in N. J., its native place n some parts of the West, particularly around Cincin- In other parts, indifferent.

McLELLAN. Medial; flattish-round; yellow, with red; stem rather small, in a rather deep cavity; small, in a rather deep basin; flesh white, tender, mild, easant. Early winter. Moderate grower, great bearer. , Woodstock, Ct.

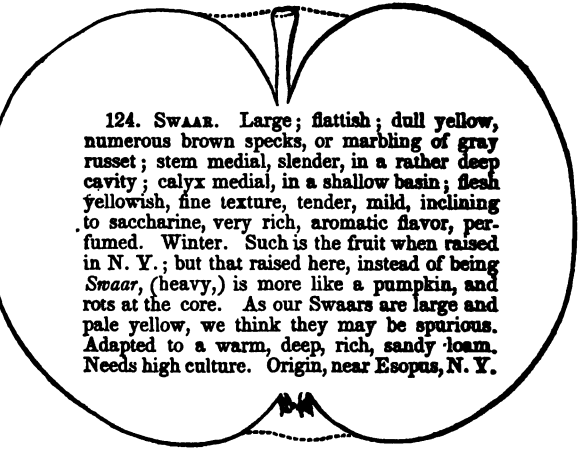
MARSTON'S RED WINTER. Large; flattish-round; ellow, mostly covered with red, clear and bright in the stem long, slender, in a funnel-shaped cavity; calyx rather open, in a rather broad and deep basin; flesh ish-white, tender, of a very pleasant flavor, inclining charine. Early winter. Tree hardy, a good grower, oductive. Fruit handsome and excellent. Originated Portsmouth, N. H., and cultivated in that region in ence to the Baldwin.

NEWTOWN SPITZENBERG. Medial; flattish-round; ellow, beautiful blush; a deep cavity; wide basin; ellowish, of a mild, pleasant flavor. Much esteemed e sections. Last of Nov. and into Feb.

DANVERS WINTER SWEET, *Epse Sweet*. Medial; sh-ovate; greenish-yellow, olive blush; flesh yellow- der, very rich, sweet and excellent for the dessert and . Winter. Good grower and bearer, mostly in even Needs a deep, rich, strong loam. Origin, Danvers, Ms., it ranks high. O. Fruit Convention says, one of the

best. One of the best winter sweets, yet it is liable to objections. A part of the fruit is small, and it does not well in some locations. Some prefer Seaver. Tolman is more profitable. Ladies' Sweeting is larger and handsomer, and will supersede it in climates to which it is adapted.

123. Ribston Pippin. Medial; flattish-round; greenish yellow, dull red in the sun; a little russet near the stalk, which is short, slender, in a rather wide and deep cavity; calyx closed, in an angular basin; flesh yellow, very firm, crisp, juicy, of a rich, rather acid, aromatic flavor. First-rate for cooking, and pretty good eating. Winter. A good spreading grower, and great bearer. In England, its native land, it ranks as the best of apples. In some parts of Maine, and other Northern regions, it is preferred to the Baldwin; but in warm locations here, it is apt to fall from the tree early and rots. Barry thinks it first-rate, and too much neglected. Kirtland decides against it. Further South, it is still poorer.



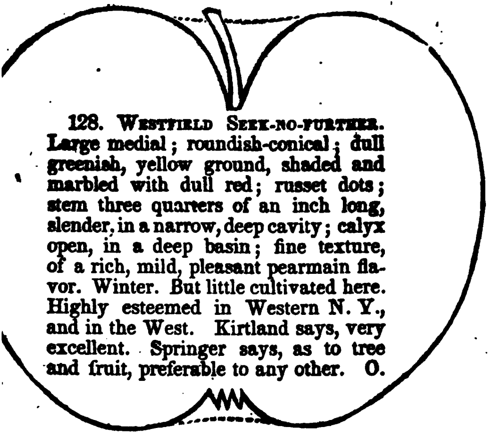
124. Swaar. Large; flattish; dull yellow, numerous brown specks, or marbling of gray russet; stem medial, slender, in a rather deep cavity; calyx medial, in a shallow basin; flesh yellowish, fine texture, tender, mild, inclining to saccharine, very rich, aromatic flavor, perfumed. Winter. Such is the fruit when raised in N. Y.; but that raised here, instead of being *Swaar*, (heavy,) is more like a pumpkin, and rots at the core. As our Swaars are large and pale yellow, we think they may be spurious. Adapted to a warm, deep, rich, sandy loam. Needs high culture. Origin, near Esopus, N. Y.

125. Black Gilliflower. Large; very oblong-conical;

nearly covered with purplish red, almost black ...h whitish, tender, pleasant, but not excellent; n fully ripe. A moderate grower, great bearer. ...r salable, but very little cultivated in this re... ater.

...LD NONSUCH, *Winter Nonsuch, Richfield Nonsuch,* ...nda, of Western N. Y. Medial; nearly all red; ...er, in a very deep cavity; small basin; very ...y, inclining to saccharine. Winter. Moderate good bearer. In N. Y., and some sections in the ... is large, fair, and excellent; but little cultivated ...s it is not profitable.

...R's RED, *Prior's Late Red.* Large; flat; brown... , little russet, tinged with red; flesh fine, rather ish, of a rich, peculiar, sub-acid flavor. Winter. ...rer. Cultivated about Cincinnati, and further ...ays, "no apple is more salable in New Or... s, adapted only to rich, alluvial soils.

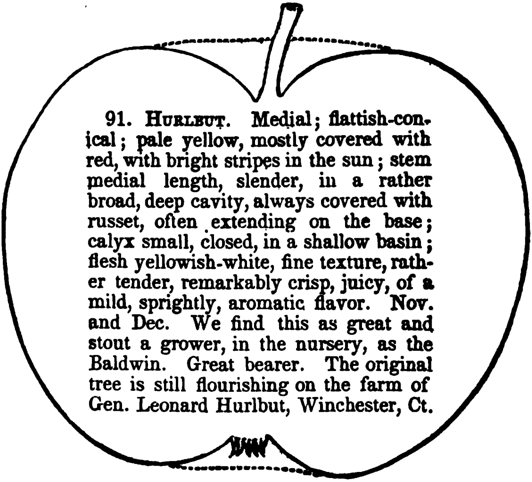


128. **WESTFIELD SEEK-NO-FURTHER.** Large medial; roundish-conical; dull greenish, yellow ground, shaded and marbled with dull red; russet dots; stem three quarters of an inch long, slender, in a narrow, deep cavity; calyx open, in a deep basin; fine texture, of a rich, mild, pleasant pearmain flavor. Winter. But little cultivated here. Highly esteemed in Western N. Y., and in the West. Kirtland says, very excellent. Springer says, as to tree and fruit, preferable to any other. O.

...on says, one of the first. Liable to bitter rot, ...n bottom lands in the West.

89. **Alexander.** Extremely large; flattish-conical; greenish-yellow and red, in the sun bright red and a little orange; stalk short, slender, deep cavity; calyx large, in a deep basin; crisp, tender, and pleasant. Wants flavor. Nov. and Dec. Moderate bearer. Foreign.

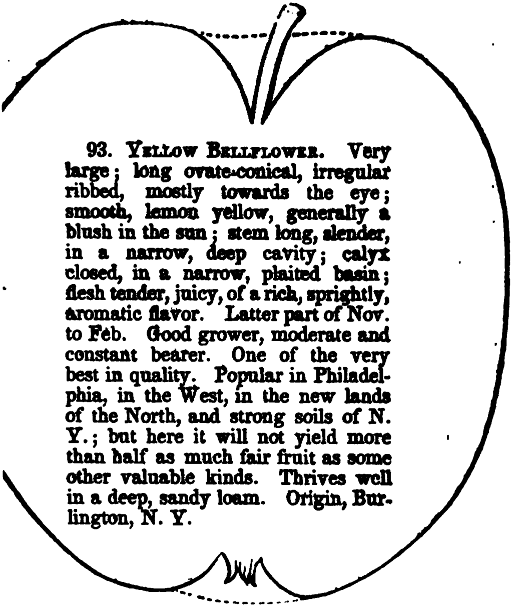
90. **Fameuse,** *Snow Apple, Pomme de Niege.* Small medial; roundish; greenish-yellow, mostly covered with red, bright in the sun; stem short, slender, in a funnel-shaped cavity; calyx small, in a small basin; flesh pure white, very tender, juicy, and pleasant. Nov. and Dec. Slow grower, good bearer. Best suited to a Northern region, or cool location. For the amateur or private garden, rather than the market, in this region. Origin, Canada, where it ranks as the first apple.



91. **Hurlbut.** Medial; flattish-conical; pale yellow, mostly covered with red, with bright stripes in the sun; stem medial length, slender, in a rather broad, deep cavity, always covered with russet, often extending on the base; calyx small, closed, in a shallow basin; flesh yellowish-white, fine texture, rather tender, remarkably crisp, juicy, of a mild, sprightly, aromatic flavor. Nov. and Dec. We find this as great and stout a grower, in the nursery, as the Baldwin. Great bearer. The original tree is still flourishing on the farm of Gen. Leonard Hurlbut, Winchester, Ct. It bore 40 bushels one year, and 20 the next. One of the finest in its season. For the dessert and kitchen.

92. **Ramsdell's Sweeting.** Large medial, or rather large; oblong, slightly ovate; dark red, with fawn-colored specks;

t. in a narrow, deep cavity; a
r tender, and mellow; and
of Oct. to Jan. Very vig-
and Native of Ct., and



93. **Yellow Bellflower.** Very large; long ovate-conical, irregular ribbed, mostly towards the eye; smooth, lemon yellow, generally a blush in the sun; stem long, slender, in a narrow, deep cavity; calyx closed, in a narrow, plaited basin; flesh tender, juicy, of a rich, sprightly, aromatic flavor. Latter part of Nov. to Feb. Good grower, moderate and constant bearer. One of the very best in quality. Popular in Philadelphia, in the West, in the new lands of the North, and strong soils of N. Y.; but here it will not yield more than half as much fair fruit as some other valuable kinds. Thrives well in a deep, sandy loam. Origin, Burlington, N. Y.

l. **Eustis,** *Ben.* Large; roundish to oval; yellow and stem medial, slender, in a narrow cavity; calyx open, broad, narrow basin; flesh firm, crisp, mild, spicy flavor. . to Jan. Good grower and bearer. Fruit salable, but hard, dryish, and not high flavor. Mother, Huirlbut, and others of its season, rank higher. Origin, South Reading, Ms.

95. GOLDEN BALL. Very large; roundish, ribbed; smooth, golden yellow, seldom brownish in the sun; stem short, stout, in a very shallow cavity; calyx small, closed, in a shallow basin; flesh tender, crisp, of a sprightly, rich, aromatic flavor; excellent for the dessert and for cooking. More hardy than the Baldwin; a good grower, but poor bearer. Nov. to Jan.; in Maine to Feb. Preferable to No. 108.

96. TWENTY OUNCE, *Cayuga Red Streak*. Very large; roundish; greenish-yellow, marbled and striped with purplish-red; stalk short, in a deep cavity; calyx small, in a medial basin; flesh coarse, dry, of a brisk, sub-acid flavor. Wanting character, but salable from its splendid and beautiful appearance. Nov. to Jan. Free, vigorous, and productive. Origin, N. Y.

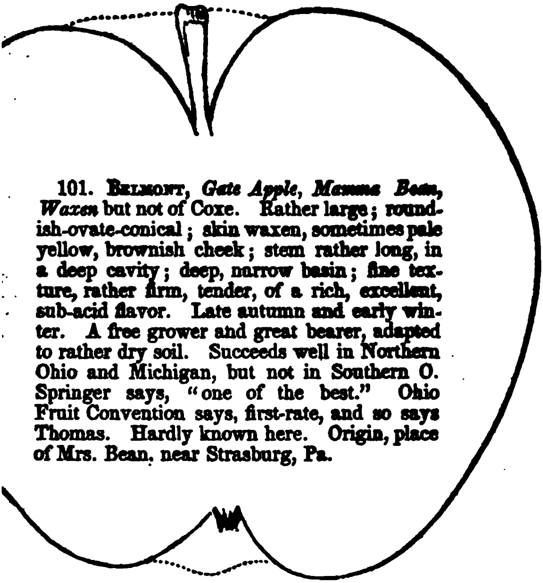
97. WINE, of Coxe, *Hay's Winter*. Large, or very large; roundish, much flattened at both ends; skin smooth, yellow, about half covered with lively red, mostly in stripes; stem short, in a deep cavity; very deep, broad basin; flesh whitish, rather coarse, tender, mild, pleasant vinous flavor. Good for dessert, and excellent for cooking and cider. Nov. to Jan. Hardy, vigorous, and productive. Native of Delaware. Cultivated in N. Y., N. J., and Pa. Popular in Philadelphia, and salable in Boston; but hardly cultivated in N. England.

98. BLUE PEARMAIN. Large, or very large; flattish-round; dull purplish red, rather brilliant in the sun, with a white bloom; stem short, in a deep cavity; calyx small, in a deep basin; flesh yellowish, firm, rather dry, mild, pleasant, but not high flavored. Nov. to Jan. A moderate grower; moderate or poor bearer, and a long time in coming into bearing. Dr. H. Cowdry, Acton, Ms., set a Baldwin and B. Pearmain at the same time, in the same soil. The former had borne 12 *barrels* when the latter only *one peck*. Yet this noble, handsome fruit is salable, and though hardly worth cultivating here; it is valuable in the North, where it does better, and is more hardy than almost every other kind.

99. POUND ROYAL. Large; flattish-roundish; light yellow, seldom a faint blush; flesh fine, tender, breaking, of a mild, pleasant, sprightly flavor. Last of Nov. into Jan. Native of Ct., and considerably cultivated there. A fine fruit, but needs high culture.

100. DUTCH MIGNONNE. Large; roundish; dull orange,

red, large russet specks; flesh rather tender, of a aromatic flavor. Latter part of Nov. into Feb. er, and bears well. Delicious in the Middle Sta- ittle known at the North.



101. **Belmont**, *Gate Apple*, *Mamma Bean*, *Waxen* but not of Coxe. Rather large; roundish-ovate-conical; skin waxen, sometimes pale yellow, brownish cheek; stem rather long, in a deep cavity; deep, narrow basin; fine texture, rather firm, tender, of a rich, excellent, sub-acid flavor. Late autumn and early winter. A free grower and great bearer, adapted to rather dry soil. Succeeds well in Northern Ohio and Michigan, but not in Southern O. Springer says, "one of the best." Ohio Fruit Convention says, first-rate, and so says Thomas. Hardly known here. Origin, place of Mrs. Bean, near Strasburg, Pa.

2. **Murphy.** Rather large; roundish-oblong; light and red; tender, pleasant flavor. Nov. to Feb. But little ed. By Mr. D. Murphy, Salem, Ms.

**lvin Sweet.** Medial; roundish; yellowish-green, pale red; flesh rich and sugary. Nov. to Feb this to be a good grower in the nursery; a good An excellent salable fruit; new and promising, but tested. Concord, Ms.

104. **Chandler.** Large; roundish; pale yellow ground; mostly red; stalk short, in a wide cavity; calyx small, in a wide basin; flesh tender, juicy, rather rich, pleasant, sub-acid. Nov. to Feb. Moderate grower, great bearer. Popular in some parts of Ct., its origin.

105. **Portsmouth Sweet.** Large; roundish-conical; yellow, striped with scarlet; sweet and excellent. Late fall and winter. We find this very vigorous. New, beautiful, and promising, but not well tested. Origin, Portsmouth, N. H.

106. **Herefordshire Pearmain,** *Royal or Eng. Pearmain.* Medial; oblong-ovate; russety green, mottled with brownish red; stem half inch long, slender; calyx wide, in a narrow plaited basin; very tender, of a pleasant aromatic flavor. Late fall and winter. Good grower, moderate bearer. Dessert and cooking. Very popular in some parts of the Middle States. Foreign.

## WINTER AND SPRING APPLES.

*Early winter* apples, here, are *late fall* and *early winter* in the Southern part of the Middle States, and the same latitude West; and they are *winter* fruits in Me., N. H., Vt., &c.

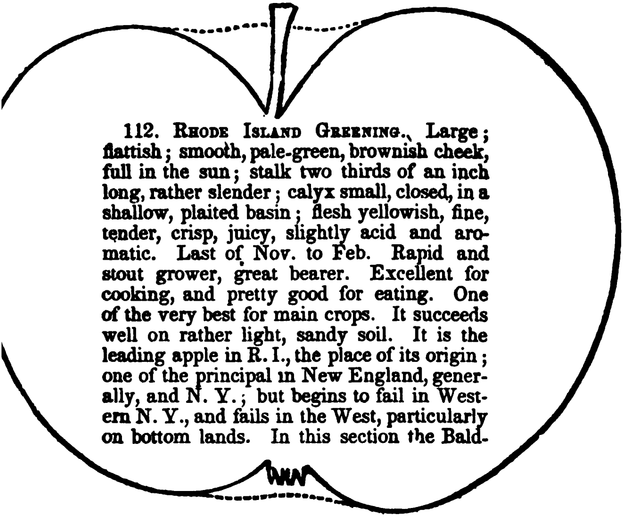
107. **King.** Many of this name. An excellent kind in this market, from N. Y. Large; ovate; yellow, mostly red; tender, rich, mild, inclining to saccharine. Nov. to Jan. As good as the Wine apple, and as showy and better than the 20 Ounce. We have from Ellwanger and Barry, Rochester, N. Y., another King. Rather large; roundish-conical; yellow, red in the sun; saccharine blended with sub-acid; excellent. Winter. Another King, in Essex Co., Ms., size of Baldwin; form of Greening; bright red, very good; great bearer. Nov. and Dec. And others.

108. **Gloria Mundi,** *Monstrous Pippin.* Extremely large; flattish-round; lemon yellow, brownish in the sun; rather acid. For cooking only. Poor bearer. Last of Nov. to Jan.

109. **Vandevere,** *Oxeye of O.* Large; roundish; yellow ground, clouded and marbled with red, light gray specks; stem half an inch long, in a deep cavity; calyx medial, in a rather shallow basin; flesh yellow, tender, crisp, of a pleasant sprightly flavor. A great bearer. Beecher says, it often hits when others miss. It is a profitable fruit in N. Y., and in the West. Last of Nov. to mid winter. Requires light, rich, sandy soil, else it is liable to blast, and to bitter rot. Native of Wilmington, Del.

110. **Bailey's Golden Sweet.** Very large; flattish; yellow, russet spots; cavity broad, medial depth; broad, shallow basin; flesh white, rather coarse, of an excellent sweet flavor. Last of Nov. and nearly through winter. Productive. Origin, orchard of Mr. Paul Bailey, Sidney, Me. *Me. P. Society.*

111. **Stevens's Gilliflower.** Large; roundish-conical; shallow cavity and basin; dull whitish ground, striped with red; flesh white, tender, pleasant, sub-acid. Last of Nov. to Feb. Good bearer. Raised by Mrs. Olive Stevens, Sweden, Me. *Me. P. Society.*

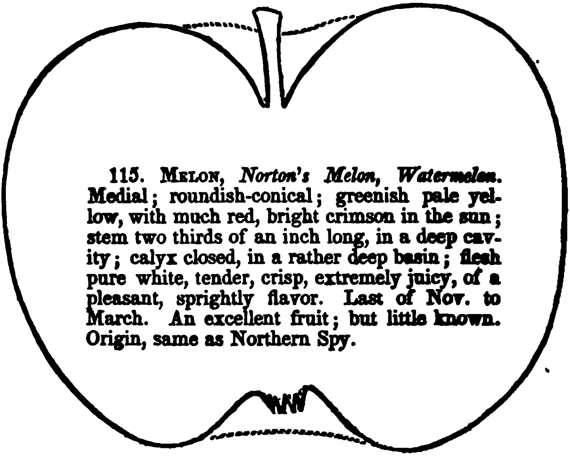


112. **Rhode Island Greening.** Large; flattish; smooth, pale-green, brownish cheek, full in the sun; stalk two thirds of an inch long, rather slender; calyx small, closed, in a shallow, plaited basin; flesh yellowish, fine, tender, crisp, juicy, slightly acid and aromatic. Last of Nov. to Feb. Rapid and stout grower, great bearer. Excellent for cooking, and pretty good for eating. One of the very best for main crops. It succeeds well on rather light, sandy soil. It is the leading apple in R. I., the place of its origin; one of the principal in New England, generally, and N. Y.; but begins to fail in Western N. Y., and fails in the West, particularly on bottom lands. In this section the Baldwin is more profitable for the market, but this is equally valuable for family use.

113. **Jonathan.** Medial; roundish-ovate; light yellow, mostly covered with lively red, brilliant in the sun; stalk

rather long, slender, in a deep cavity; calyx small, in a deep basin; flesh white, tender, juicy, of a mild, sprightly flavor. Last of Nov. to Feb. Very popular in some sections, but too small for market here. Thomas says, beautiful, excellent, and great bearer. Kirtland says, "preferable to Esopus Spitzenburg here." Origin, Kingston, N. Y.

114. Wells's Sweeting. Medial; roundish; dull green, a dull blush; stem short and slender; calyx small, in a shallow basin; flesh white, very tender, rich, sweet, and sprightly. Last of Nov. to Feb. A good bearer. Origin, near Newburgh, N. Y.



115. Melon, *Norton's Melon*, *Watermelon*. Medial; roundish-conical; greenish pale yellow, with much red, bright crimson in the sun; stem two thirds of an inch long, in a deep cavity; calyx closed, in a rather deep basin; flesh pure white, tender, crisp, extremely juicy, of a pleasant, sprightly flavor. Last of Nov. to March. An excellent fruit; but little known. Origin, same as Northern Spy.

116. Minister. Large; long-ovate; mostly red on yellow ground, bright red in the sun; stem an inch long, slender, in a broad, shallow cavity; calyx small, closed, in a very narrow, plaited basin; flesh yellowish-white, very tender, of a rather acid, but pleasant, pie apple flavor. Last of Nov. to March. Great grower, and enormous bearer, so that the fruit often needs thinning. With rough handling and exposure, this fruit rots from bruising, or ripens prematurely,

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**Kaighn's Spitzenberg.** More pointed than the Eso-
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stem rather small, in a rather deep cavity;
ll, in a rather deep basin; flesh white, tender, mild,
nt. Early winter. Moderate grower, great bearer.
Woodstock, Ct.

**Marston's Red Winter.** Large; flattish-round;
llow, mostly covered with red, clear and bright in the
long, slender, in a funnel-shaped cavity; calyx
er open, in a rather broad and deep basin; flesh
white, tender, of a very pleasant flavor, inclining
e. Early winter. Tree hardy, a good grower,
ve. Fruit handsome and excellent. Originated
th, N. H., and cultivated in that region in
he Baldwin.

**Newtown Spitzenberg.** Medial; flattish-round;
llow, beautiful blush; a deep cavity; wide basin;
llowish, of a mild, pleasant flavor. Much esteemed
sections. Last of Nov. and into Feb.

**Danvers Winter Sweet,** *Epse Sweet.* Medial;
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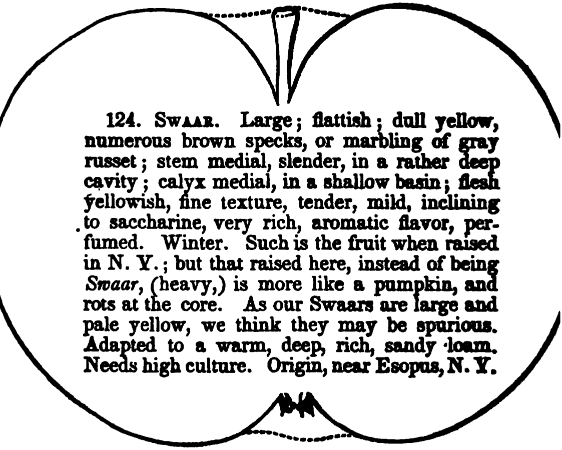
123. Ribston Pippin. Medial; flattish-round; greenish yellow, dull red in the sun; a little russet near the stalk, which is short, slender, in a rather wide and deep cavity; calyx closed, in an angular basin; flesh yellow, very firm, crisp, juicy, of a rich, rather acid, aromatic flavor. First-rate for cooking, and pretty good eating. Winter. A good spreading grower, and great bearer. In England, its native land, it ranks as the best of apples. In some parts of Maine, and other Northern regions, it is preferred to the Baldwin; but in warm locations here, it is apt to fall from the tree early and rots. Barry thinks it first-rate, and too much neglected. Kirtland decides against it. Further South, it is still poorer.



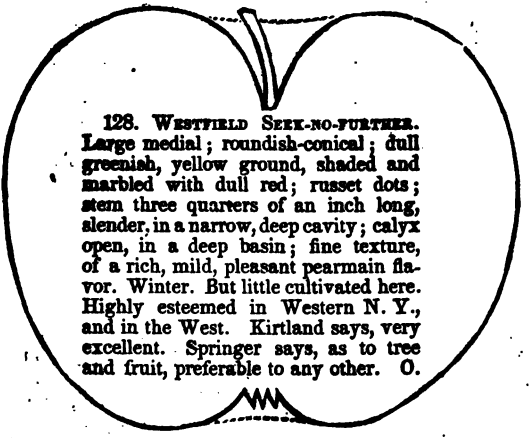
124. Swaar. Large; flattish; dull yellow, numerous brown specks, or marbling of gray russet; stem medial, slender, in a rather deep cavity; calyx medial, in a shallow basin; flesh yellowish, fine texture, tender, mild, inclining to saccharine, very rich, aromatic flavor, perfumed. Winter. Such is the fruit when raised in N. Y.; but that raised here, instead of being *Swaar*, (heavy,) is more like a pumpkin, and rots at the core. As our Swaars are large and pale yellow, we think they may be spurious. Adapted to a warm, deep, rich, sandy loam. Needs high culture. Origin, near Esopus, N. Y.

125. Black Gilliflower. Large; very oblong-conical;

yellow ground, nearly covered with purplish red, almost black in the sun; flesh whitish, tender, pleasant, but not excellent; rather dry when fully ripe. A moderate grower, great bearer. The fruit rather salable, but very little cultivated in this region. Winter.

126. Old Nonsuch, *Winter Nonsuch, Richfield Nonsuch, Red Canada*, of Western N. Y. Medial; nearly all red; stem slender, in a very deep cavity; small basin; very tender, juicy, inclining to saccharine. Winter. Moderate grower, good bearer. In N. Y., and some sections in the West, it is large, fair, and excellent; but little cultivated here, as it is not profitable.

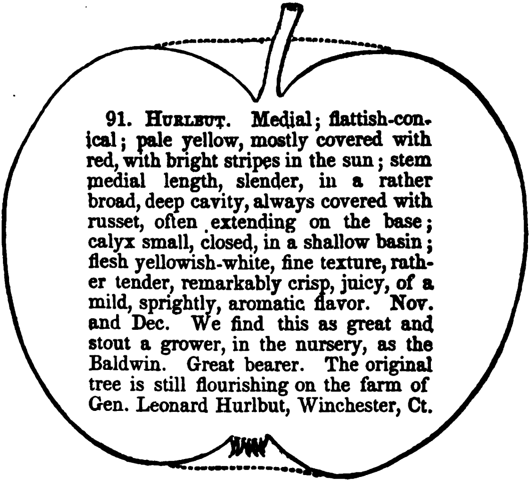
127. Prior's Red, *Prior's Late Red*. Large; flat; brownish yellow, little russet, tinged with red; flesh fine, rather tender, dryish, of a rich, peculiar, sub-acid flavor. Winter. A great bearer. Cultivated about Cincinnati, and farther South. Byram says, "no apple is more salable in New Orleans." Elliott says, adapted only to rich, alluvial soils.



128. Westfield Seek-no-further. Large medial; roundish-conical; dull greenish, yellow ground, shaded and marbled with dull red; russet dots; stem three quarters of an inch long, slender, in a narrow, deep cavity; calyx open, in a deep basin; fine texture, of a rich, mild, pleasant pearmain flavor. Winter. But little cultivated here. Highly esteemed in Western N. Y., and in the West. Kirtland says, very excellent. Springer says, as to tree and fruit, preferable to any other. O. Fruit Convention says, one of the first. Liable to bitter rot, of late years, on bottom lands in the West.

89. **Alexander.** Extremely large; flattish-conical; greenish-yellow and red, in the sun bright red and a little orange; stalk short, slender, deep cavity; calyx large, in a deep basin; crisp, tender, and pleasant. Wants flavor. Nov. and Dec. Moderate bearer. Foreign.

90. **Fameuse,** *Snow Apple, Pomme de Niege.* Small medial; roundish; greenish-yellow, mostly covered with red, bright in the sun; stem short, slender, in a funnel-shaped cavity; calyx small, in a small basin; flesh pure white, very tender, juicy, and pleasant. Nov. and Dec. Slow grower, good bearer. Best suited to a Northern region, or cool location. For the amateur or private garden, rather than the market, in this region. Origin, Canada, where it ranks as the first apple.



91. **Hurlbut.** Medial; flattish-conical; pale yellow, mostly covered with red, with bright stripes in the sun; stem medial length, slender, in a rather broad, deep cavity, always covered with russet, often extending on the base; calyx small, closed, in a shallow basin; flesh yellowish-white, fine texture, rather tender, remarkably crisp, juicy, of a mild, sprightly, aromatic flavor. Nov. and Dec. We find this as great and stout a grower, in the nursery, as the Baldwin. Great bearer. The original tree is still flourishing on the farm of Gen. Leonard Hurlbut, Winchester, Ct. It bore 40 bushels one year, and 20 the next. One of the finest in its season. For the dessert and kitchen,

92. **Ramsdell's Sweeting.** Large medial, or rather large; [illegible] slightly ovate; dark red, with fawn-colored specks,

; stem very short, in a narrow, deep cavity; a
; flesh yellowish, very tender, and mellow, and
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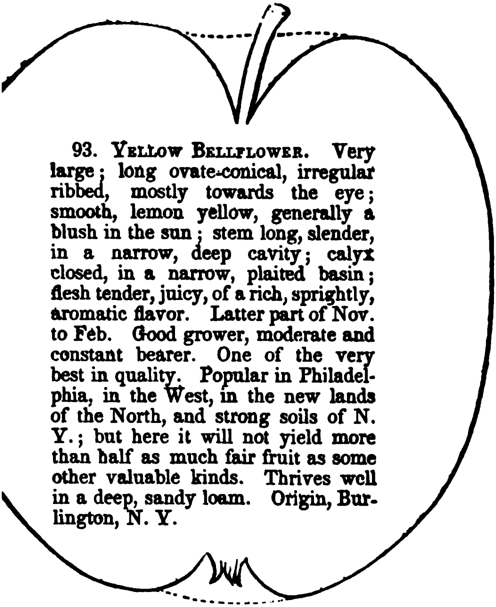
known elsewhere.



93. Yellow Bellflower. Very large; long ovate-conical, irregular ribbed, mostly towards the eye; smooth, lemon yellow, generally a blush in the sun; stem long, slender, in a narrow, deep cavity; calyx closed, in a narrow, plaited basin; flesh tender, juicy, of a rich, sprightly, aromatic flavor. Latter part of Nov. to Feb. Good grower, moderate and constant bearer. One of the very best in quality. Popular in Philadelphia, in the West, in the new lands of the North, and strong soils of N. Y.; but here it will not yield more than half as much fair fruit as some other valuable kinds. Thrives well in a deep, sandy loam. Origin, Burlington, N. Y.

Eustis, *Ben.* Large; roundish to oval; yellow and
stem medial, slender, in a narrow cavity; calyx open,
road, narrow basin; flesh firm, crisp, mild, spicy flavor.
to Jan. Good grower and bearer. Fruit salable, but
rather hard, dryish, and not high flavor. Mother, Hurl-

but, and others of its season, rank higher. Origin, South Reading, Ms.

95. Golden Ball. Very large; roundish, ribbed; smooth, golden yellow, seldom brownish in the sun; stem short, stout, in a very shallow cavity; calyx small, closed, in a shallow basin; flesh tender, crisp, of a sprightly, rich, aromatic flavor; excellent for the dessert and for cooking. More hardy than the Baldwin; a good grower, but poor bearer. Nov. to Jan.; in Maine to Feb. Preferable to No. 108.

96. Twenty Ounce, *Cayuga Red Streak*. Very large; roundish; greenish-yellow, marbled and striped with purplish-red; stalk short, in a deep cavity; calyx small, in a medial basin; flesh coarse, dry, of a brisk, sub-acid flavor. Wanting character, but salable from its splendid and beautiful appearance. Nov. to Jan. Free, vigorous, and productive. Origin, N. Y.

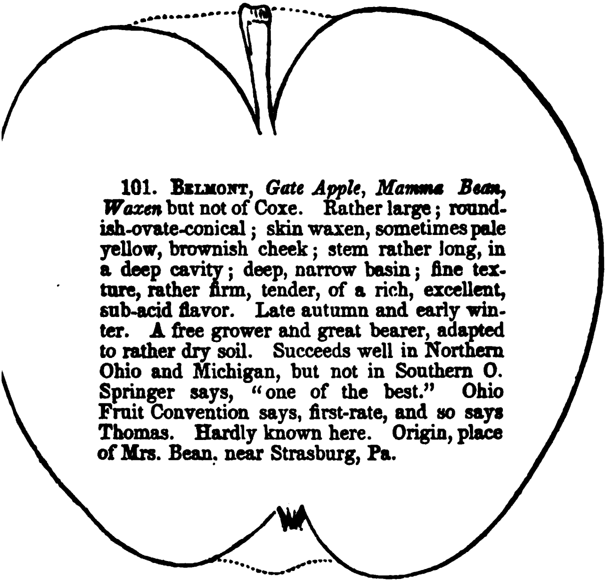
97. Wine, of Coxe, *Hay's Winter*. Large, or very large; roundish, much flattened at both ends; skin smooth, yellow, about half covered with lively red, mostly in stripes; stem short, in a deep cavity; very deep, broad basin; flesh whitish, rather coarse, tender, mild, pleasant vinous flavor. Good for dessert, and excellent for cooking and cider. Nov. to Jan. Hardy, vigorous, and productive. Native of Delaware. Cultivated in N. Y., N. J., and Pa. Popular in Philadelphia, and salable in Boston; but hardly cultivated in N. England.

98. Blue Pearmain. Large, or very large; flattish-round; dull purplish red, rather brilliant in the sun, with a white bloom; stem short, in a deep cavity; calyx small, in a deep basin; flesh yellowish, firm, rather dry, mild, pleasant, but not high flavored. Nov. to Jan. A moderate grower; moderate or poor bearer, and a long time in coming into bearing. Dr. H. Cowdry, Acton, Ms., set a Baldwin and B. Pearmain at the same time, in the same soil. The former had borne 12 *barrels* when the latter only *one peck*. Yet this noble, handsome fruit is salable, and though hardly worth cultivating here; it is valuable in the North, where it does better, and is more hardy than almost every other kind.

99. Pound Royal. Large; flattish-roundish; light yellow, seldom a faint blush; flesh fine, tender, breaking, of a mild, pleasant, sprightly flavor. Last of Nov. into Jan.
tive of Ct., and considerably cultivated there. A fine
but needs high culture.

Dutch Mignonne. Large; roundish; dull orange;

and dull red, large russet specks; flesh rather tender, of a rich, high, aromatic flavor. Latter part of Nov. into Feb. Good grower, and bears well. Delicious in the Middle Region; but little known at the North.



101. Belmont, *Gate Apple*, *Mamma Bean*, *Waxen* but not of Coxe. Rather large; roundish-ovate-conical; skin waxen, sometimes pale yellow, brownish cheek; stem rather long, in a deep cavity; deep, narrow basin; fine texture, rather firm, tender, of a rich, excellent, sub-acid flavor. Late autumn and early winter. A free grower and great bearer, adapted to rather dry soil. Succeeds well in Northern Ohio and Michigan, but not in Southern O. Springer says, "one of the best." Ohio Fruit Convention says, first-rate, and so says Thomas. Hardly known here. Origin, place of Mrs. Bean, near Strasburg, Pa.

102. Murphy. Rather large; roundish-oblong; light and dark red; tender, pleasant flavor. Nov. to Feb. But little cultivated. By Mr. D. Murphy, Salem, Ms.

103. Melvin Sweet. Medial; roundish; yellowish-green, striped with pale red; flesh rich and sugary. Nov. to Feb We find this to be a good grower in the nursery; a good bearer. An excellent salable fruit; new and promising, but not well tested. Concord, Ms.

104. **Chandler.** Large; roundish; pale yellow ground; mostly red; stalk short, in a wide cavity; calyx small, in a wide basin; flesh tender, juicy, rather rich, pleasant, sub-acid. Nov. to Feb. Moderate grower, great bearer. Popular in some parts of Ct., its origin.

105. **Portsmouth Sweet.** Large; roundish-conical; yellow, striped with scarlet; sweet and excellent. Late fall and winter. We find this very vigorous. New, beautiful, and promising, but not well tested. Origin, Portsmouth, N. H.

106. **Herefordshire Pearmain,** *Royal or Eng. Pearmain.* Medial; oblong-ovate; russety green, mottled with brownish red; stem half inch long, slender; calyx wide, in a narrow plaited basin; very tender, of a pleasant aromatic flavor. Late fall and winter. Good grower, moderate bearer. Dessert and cooking. Very popular in some parts of the Middle States. Foreign.

### Winter and Spring Apples.

*Early winter* apples, here, are *late fall* and *early winter* in the Southern part of the Middle States, and the same latitude West; and they are *winter* fruits in Me., N. H., Vt., &c.

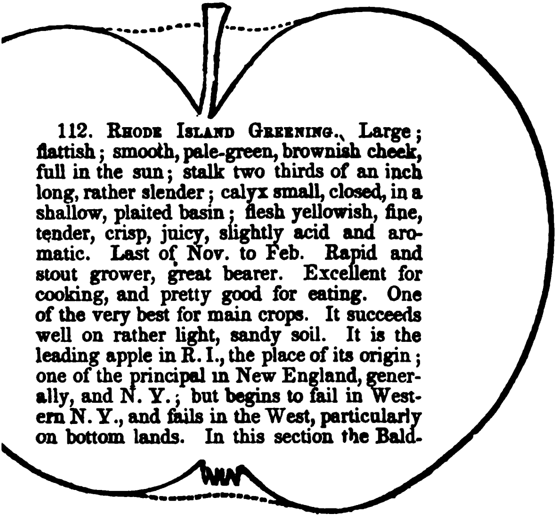
107. **King.** Many of this name. An excellent kind in this market, from N. Y. Large; ovate; yellow, mostly red; tender, rich, mild, inclining to saccharine. Nov. to Jan. As good as the Wine apple, and as showy and better than the 20 Ounce. We have from Ellwanger and Barry, Rochester, N. Y., another King. Rather large; roundish-conical; yellow, red in the sun; saccharine blended with sub-acid; excellent. Winter. Another King, in Essex Co., Ms., size of Baldwin; form of Greening; bright red, very good; great bearer. Nov. and Dec. And others.

108. **Gloria Mundi,** *Monstrous Pippin.* Extremely large; flattish-round; lemon yellow, brownish in the sun; rather acid. For cooking only. Poor bearer. Last of Nov. to Jan.

109. **Vandevere,** *Oxeye of O.* Large; roundish; yellow ground, clouded and marbled with red, light gray specks; stem half an inch long, in a deep cavity; calyx medial, in a rather shallow basin; flesh yellow, tender, crisp, of a pleasant sprightly flavor. A great bearer. Beecher says, it often hits when others miss. It is a profitable fruit in N. Y., and in the West. Last of Nov. to mid winter. Requires light, rich, sandy soil, else it is liable to blast, and to bitter rot. Native of Wilmington, Del.

0. **Bailey's Golden Sweet.** Very large; flattish; yel- russet spots; cavity broad, medial depth; broad, shallow 1; flesh white, rather coarse, of an excellent sweet r. Last of Nov. and nearly through winter. Produc- Origin, orchard of Mr. Paul Bailey, Sidney, Me. *Me. Society.*

1. **Stevens's Gilliflower.** Large; roundish-conical; r cavity and basin; dull whitish ground, striped with white, tender, pleasant, sub-acid. Last of Nov. al. Good bearer. Raised by Mrs. Olive Stevens, Swe- Me. *Me. P. Society.*

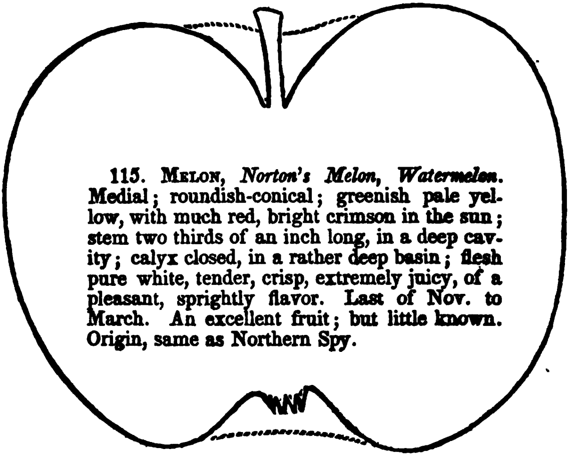


112. **Rhode Island Greening.** Large; flattish; smooth, pale-green, brownish cheek, full in the sun; stalk two thirds of an inch long, rather slender; calyx small, closed, in a shallow, plaited basin; flesh yellowish, fine, tender, crisp, juicy, slightly acid and aromatic. Last of Nov. to Feb. Rapid and stout grower, great bearer. Excellent for cooking, and pretty good for eating. One of the very best for main crops. It succeeds well on rather light, sandy soil. It is the leading apple in R. I., the place of its origin; one of the principal in New England, generally, and N. Y.; but begins to fail in Western N. Y., and fails in the West, particularly on bottom lands. In this section the Baldwin is more profitable for the market, but this is equally able for family use.

3. **Jonathan.** Medial; roundish-ovate; light yellow, ly covered with lively red, brilliant in the sun; stalk

rather long, slender, in a deep cavity; calyx small, in a deep basin; flesh white, tender, juicy, of a mild, sprightly flavor. Last of Nov. to Feb. Very popular in some sections, but too small for market here. Thomas says, beautiful, excellent, and great bearer. Kirtland says, "preferable to Esopus Spitzenburg here." Origin, Kingston, N. Y.

114. **Wells's Sweeting.** Medial; roundish; dull green, a dull blush; stem short and slender; calyx small, in a shallow basin; flesh white, very tender, rich, sweet, and sprightly. Last of Nov. to Feb. A good bearer. Origin, near Newburgh, N. Y.



115. **Melon,** *Norton's Melon, Watermelon.* Medial; roundish-conical; greenish pale yellow, with much red, bright crimson in the sun; stem two thirds of an inch long, in a deep cavity; calyx closed, in a rather deep basin; flesh pure white, tender, crisp, extremely juicy, of a pleasant, sprightly flavor. Last of Nov. to March. An excellent fruit; but little known. Origin, same as Northern Spy.

116. **Minister.** Large; long-ovate; mostly red on yellow ground, bright red in the sun; stem an inch long, slender, in a broad, shallow cavity; calyx small, closed, in a very narrow, plaited basin; flesh yellowish-white, very tender, of a rather acid, but pleasant, pie apple flavor. Last of Nov. to March. Great grower, and enormous bearer, so that the fruit often needs thinning. With rough handling and exposure, this fruit rots from bruising, or ripens prematurely,

too acid; but carefully picked and saved in a cool
o ripen late, it loses most of its acidity, and becomes
ellent and most beautiful fruit. Needs a deep, sandy
Origin, Essex Co., Ms.

. Peck's Pleasant. Large; roundish-flat; clear yel-
d in the sun; stem short, in a wide, wavy cavity;
small, open, in a deep basin; flesh fine, firm, crisp,
of an excellent, high, aromatic flavor. Early winter.
ate grower and bearer. First-rate quality, resembling
wn Pippin. Eaton says, "has been a great favorite
I., but is going out of cultivation, as the fruit is defec-
It is rather popular in Western N. Y. Elliott says,
rate on gravelly or sandy soils." Here, it is defective.
res new lands or very high culture.

. Kaighn's Spitzenberg. More pointed than the Eso-
pale red, white specks; tender, juicy, fine flavor.
winter. Nearly abandoned in N. J., its native place
in some parts of the West, particularly around Cincin-
In other parts, indifferent.

. McLellan. Medial; flattish-round; yellow, with
red; stem rather small, in a rather deep cavity;
small, in a rather deep basin; flesh white, tender, mild,
easant. Early winter. Moderate grower, great bearer.
, Woodstock, Ct.

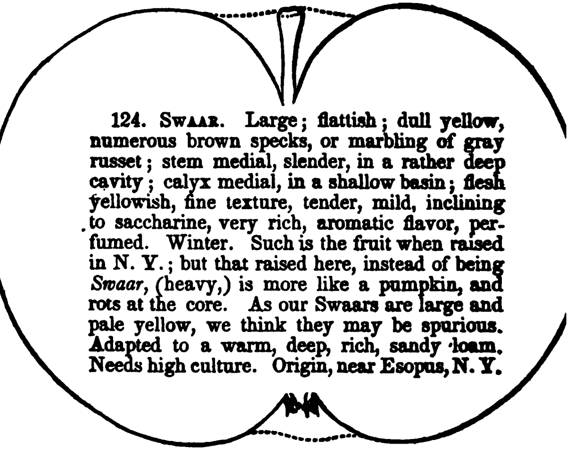
. Marston's Red Winter. Large; flattish-round;
ellow, mostly covered with red, clear and bright in the
stem long, slender, in a funnel-shaped cavity; calyx
rather open, in a rather broad and deep basin; flesh
ish-white, tender, of a very pleasant flavor, inclining
charine. Early winter. Tree hardy, a good grower,
roductive. Fruit handsome and excellent. Originated
Portsmouth, N. H., and cultivated in that region in
ence to the Baldwin.

. Newtown Spitzenberg. Medial; flattish-round;
ellow, beautiful blush; a deep cavity; wide basin;
ellowish, of a mild, pleasant flavor. Much esteemed
sections. Last of Nov. and into Feb.

. Danvers Winter Sweet, *Epse Sweet*. Medial;
ish-ovate; greenish-yellow, olive blush; flesh yellow-
nder, very rich, sweet and excellent for the dessert and
. Winter. Good grower and bearer, mostly in even
Needs a deep, rich, strong loam. Origin, Danvers, Ms.,
it ranks high. O. Fruit Convention says, one of the

best. One of the best winter sweets, yet it is liable to objections. A part of the fruit is small, and it does not well in some locations. Some prefer Seaver. Tolman is more profitable. Ladies' Sweeting is larger and handsomer, and will supersede it in climates to which it is adapted.

123. **Ribston Pippin.** Medial; flattish-round; greenish yellow, dull red in the sun; a little russet near the stalk, which is short, slender, in a rather wide and deep cavity; calyx closed, in an angular basin; flesh yellow, very firm, crisp, juicy, of a rich, rather acid, aromatic flavor. First-rate for cooking, and pretty good eating. Winter. A good spreading grower, and great bearer. In England, its native land, it ranks as the best of apples. In some parts of Maine, and other Northern regions, it is preferred to the Baldwin; but in warm locations here, it is apt to fall from the tree early and rots. Barry thinks it first-rate, and too much neglected. Kirtland decides against it. Further South, it is still poorer.



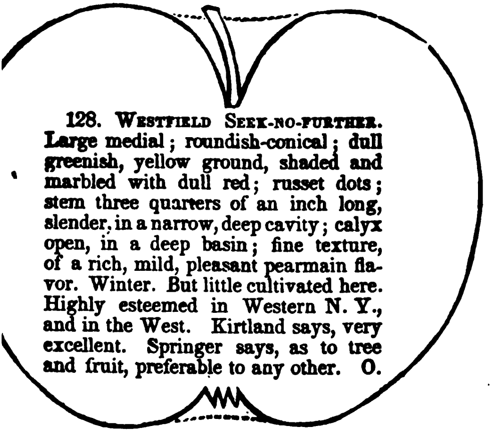
124. **Swaar.** Large; flattish; dull yellow, numerous brown specks, or marbling of gray russet; stem medial, slender, in a rather deep cavity; calyx medial, in a shallow basin; flesh yellowish, fine texture, tender, mild, inclining to saccharine, very rich, aromatic flavor, perfumed. Winter. Such is the fruit when raised in N. Y.; but that raised here, instead of being *Swaar*, (heavy,) is more like a pumpkin, and rots at the core. As our Swaars are large and pale yellow, we think they may be spurious. Adapted to a warm, deep, rich, sandy loam. Needs high culture. Origin, near Esopus, N. Y.

125. **Black Gilliflower.** Large; very oblong-conical;

[illegible] red, almost black [illegible] but not excellent; [illegible] grower, great bearer. [illegible], but [illegible] cultivated in this re-[illegible]

OLD NONSUCH, *Winter Nonsuch, Richfield Nonsuch,* [illegible] da. of Western N. Y. Medial; nearly all red; [illegible] in a very deep cavity; small basin; very [illegible], inclining to saccharine. Winter. Moderate good bearer. In N. Y., and some sections in the [illegible] is large, fair, and excellent; but little cultivated as it is not profitable.

7. PRIOR'S RED, *Prior's Late Red.* Large; flat; brown-[illegible]w, little russet, tinged with red; flesh fine, rather [illegible] dryish, of a rich, peculiar, sub-acid flavor. Winter. [illegible] bearer. Cultivated about Cincinnati, and further [illegible] Byram says, "no apple is more salable in New Or-[illegible]." Elliott says, adapted only to rich, alluvial soils.

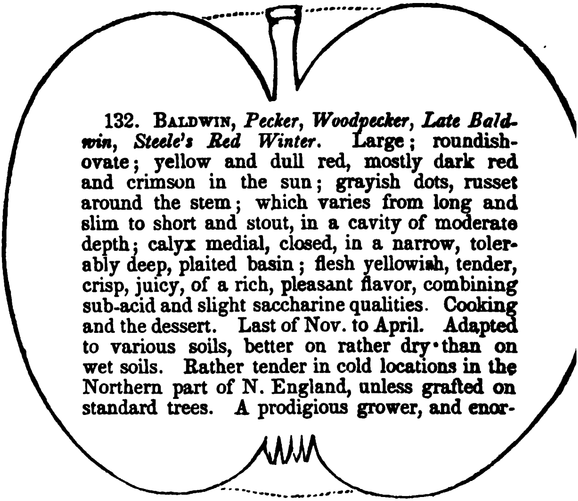


128. WESTFIELD SEEK-NO-FURTHER. Large medial; roundish-conical; dull greenish, yellow ground, shaded and marbled with dull red; russet dots; stem three quarters of an inch long, slender, in a narrow, deep cavity; calyx open, in a deep basin; fine texture, of a rich, mild, pleasant pearmain flavor. Winter. But little cultivated here. Highly esteemed in Western N. Y., and in the West. Kirtland says, very excellent. Springer says, as to tree and fruit, preferable to any other. O. Convention says, one of the first. Liable to bitter rot, [illegible]e years, on bottom lands in the West.

129. **Golden Pippin.** Small; round; yellow, crisp, rich, brisk, high acid flavor. Winter. Too acid for eating, too small for profit. English.

130. **Pennock's Red Winter.** Large; flattish, deep red, sweetish, dry, poor, subject to bitter rot. Winter. Tree large and productive.

131. **Black apple.** Small; roundish; dark purplish red; flesh firm, wanting flavor. Winter.

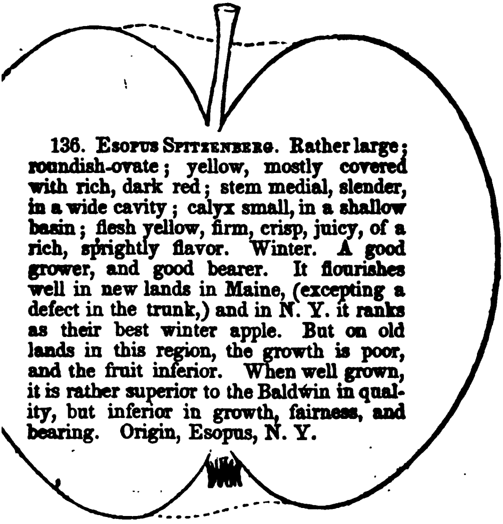


132. **Baldwin**, *Pecker*, *Woodpecker*, *Late Baldwin*, *Steele's Red Winter*. Large; roundish-ovate; yellow and dull red, mostly dark red and crimson in the sun; grayish dots, russet around the stem; which varies from long and slim to short and stout, in a cavity of moderate depth; calyx medial, closed, in a narrow, tolerably deep, plaited basin; flesh yellowish, tender, crisp, juicy, of a rich, pleasant flavor, combining sub-acid and slight saccharine qualities. Cooking and the dessert. Last of Nov. to April. Adapted to various soils, better on rather dry than on wet soils. Rather tender in cold locations in the Northern part of N. England, unless grafted on standard trees. A prodigious grower, and enormous bearer, mostly in even years. (Page 87.) Cultivated far more than any other kind in this region. It does well in N. Y., but begins to fail in the Western part of that State, and is liable to bitter rot in the West. Wilmington and Tewksbury, Ms., seem to have an equal claim to its origin. *Late Baldwin* is a modification of this fruit. The tree more hardy in the North, and bearing more in odd years. The fruit harder, more flat, and keeps longer.

**Aunt Hannah.** Medial; roundish-ovate; straw
; of a very rich, pleasant flavor, Winter. Origin,
Co., Ms.

**Brabant's Bellflower.** Very large; roundish;
ellow, mostly covered with red, fine bloom, full in the
umerous dark specks; flesh firm, very juicy, crisp, of
, fine, rather acid flavor. Winter. Pretty good, but
gling grower. Hodge recommends it highly. Elliot
s it valuable. Origin, Holland.

. **Pomme Gris.** Small medial; roundish; greenish-
russety, reddish in the sun; tender, rich, high flavored.
r. Rather slow grower, good bearer. An excellent
t fruit for the North.



136. **Esopus Spitzenberg.** Rather large; roundish-ovate; yellow, mostly covered with rich, dark red; stem medial, slender, in a wide cavity; calyx small, in a shallow basin; flesh yellow, firm, crisp, juicy, of a rich, sprightly flavor. Winter. A good grower, and good bearer. It flourishes well in new lands in Maine, (excepting a defect in the trunk,) and in N. Y. it ranks as their best winter apple. But on old lands in this region, the growth is poor, and the fruit inferior. When well grown, it is rather superior to the Baldwin in quality, but inferior in growth, fairness, and bearing. Origin, Esopus, N. Y.

**Flushing** and **Kaighn's Spitzenberg**, are infe-
oregoing, and in use nearly at the same time.

138. **Winesap.** Medial; oblong; dark red; crisp, of a pleasant, rich flavor; superior for baking. Last of Nov. to May. Cultivated in N. J., and in some parts of the West.

139. **Leicester Sweeting,** *Porter's Sweeting.* Rather large; flattish; greenish yellow, tender, rich, excellent. Fine for the dessert or baking. Winter. Vigorous and productive. One of our best. New. Leicester, Ms.

140. **Felch.** Large; flattish-conical; greenish-yellow, and dull red, bright in the sun; stem long, slim; flesh firm, heavy, crisp, pleasant, sub-acid, and fresh after long keeping. Winter, and into Spring. Origin, Limerick, Me.

141. **White Seek-no-further.** Medial; roundish; green, with dark gray spots. When perfect, excellent; but very variable; often of poor appearance, and wanting flavor. Little cultivated. Long Island, N. Y.

142. **Michael Henry Pippin.** Medial; roundish-ovate; yellowish-green; tender, juicy, and high flavored. Dec. to March. Popular in some parts of the West.

143. **English Russet.** Medial; ovate; greenish yellow, mostly covered with russet; firm, crisp, of a pleasant, mild, slightly sub-acid flavor. Winter and early Spring. Productive, and in N. Y. profitable for the market.

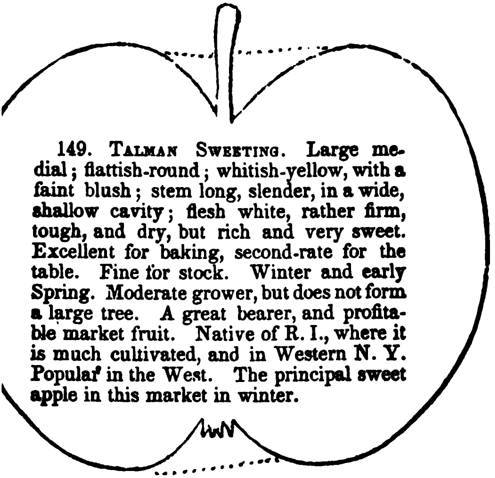
144. **Hartford Sweeting.** Large; flattish-round; yellowish-green, mostly red; tender, very juicy, of a rich, pleasant flavor. Dec. to Summer. Hardy, slow grower, great bearer. Profitable for market. Origin, near Hartford, Ct.

145. **Winter Sweet Paradise.** Rather large; roundish; greenish-yellow, a dull blush; fine texture, juicy, very sweet, of an excellent, sprightly flavor. Winter and early Spring. Great bearer, and fair fruit. Native of Pa.

146. **Woolman's Long,** *Ortley Pippin, White Bellflower, Detroit of the West.* Medial; oblong; bright yellow, scarlet blush, and russet patches in the sun; stem slender; calyx large; flesh whitish, crisp, of a sprightly, aromatic flavor. A great bearer. Winter and early Spring. Not esteemed in N. England. It does better further South, and is very popular in the Southern regions of the West. Ernst says, a universal favorite, and better than Yellow Bellflower.

147. **Lady Apple,** *Api Petit.* Very small; flat; glossy, lemon yellow, bright red cheek; tender, crisp, juicy, pleasant, but not high flavored. Winter and early Spring. Great bearer. Popular in N. Y. Often imperfect in N. England. Kirtland says, subject to fire blight there.

DOMINE. Medial; flat; greenish-yellow, bright red
t specks in the sun; stem half an inch long, slen-
wide, very deep cavity; calyx small, in a broad
sh white, very tender, juicy, of a sprightly, pleasant
ut not rich. Winter and early Spring. A rapid
and prodigious bearer. Much esteemed in N. Y.
, supposed.

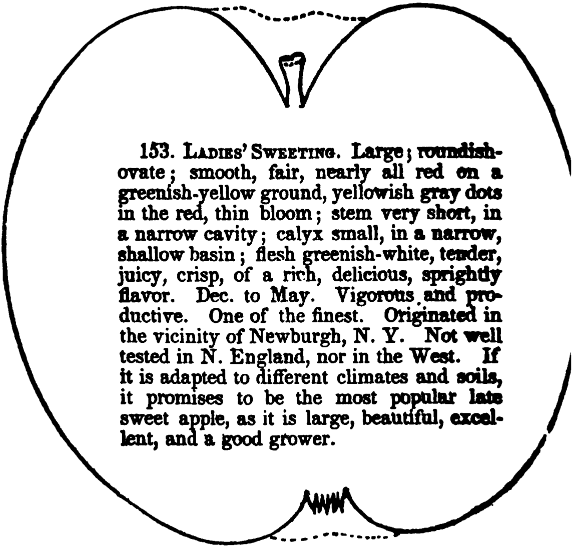


149. TALMAN SWEETING. Large medial; flattish-round; whitish-yellow, with a faint blush; stem long, slender, in a wide, shallow cavity; flesh white, rather firm, tough, and dry, but rich and very sweet. Excellent for baking, second-rate for the table. Fine for stock. Winter and early Spring. Moderate grower, but does not form a large tree. A great bearer, and profitable market fruit. Native of R. I., where it is much cultivated, and in Western N. Y. Popular in the West. The principal sweet apple in this market in winter.

RED RUSSET. Large; flattish-round; russet, half
d with red; flesh firm, crisp, juicy, of pleasant, rich
. Late Winter and Spring. Great grower, and bearer.
and promising. It seems to be a cross between the
win and Roxbury Russet. Origin, farm of Mr. Aaron
orn, Hampton Falls, N. H.

1. MOORE'S LATE SWEET. Large; flattish; greenish-
w, brown cheek; tender, rich, sweet, and excellent.
ert and baking. Winter and early Spring. Great
er, and productive. New. Mr. J. B. Moore, Concord,

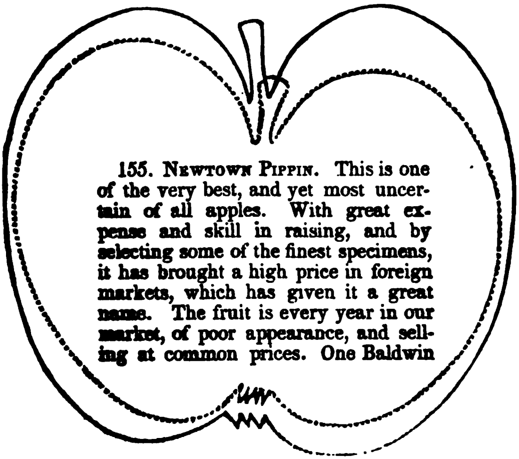
152. **American Golden Russet**, *Hunt's Russet*, *Sheep Nose* of Coxe, *Little Pearmain* in some parts of O., *Russet Pearmain* in some sections of the West. Small; roundish-ovate; dull yellow and russet, reddish in the sun; remarkably tender, of a rich, high spicy flavor. Winter and Spring. One of the very best, but lacks size for the market. Very hardy, a moderate grower, great and constant bearer. Origin, Hunt farm, Concord, Ms. It flourishes throughout the country. Beecher, when in the West, said, "Prince of small apples."



153. **Ladies' Sweeting.** Large; roundish-ovate; smooth, fair, nearly all red on a greenish-yellow ground, yellowish gray dots in the red, thin bloom; stem very short, in a narrow cavity; calyx small, in a narrow, shallow basin; flesh greenish-white, tender, juicy, crisp, of a rich, delicious, sprightly flavor. Dec. to May. Vigorous and productive. One of the finest. Originated in the vicinity of Newburgh, N. Y. Not well tested in N. England, nor in the West. If it is adapted to different climates and soils, it promises to be the most popular late sweet apple, as it is large, beautiful, excellent, and a good grower.

154. **Seaver Sweet**, *Can* of Coxe probably. Large; roundish-conical; greenish-olive, brownish in the sun; stem very long, medial, in a narrow, deep cavity; calyx small, closed, in a slight basin; flesh rather tender, quite sweet,

rich, and excellent, especially for baking. Dec. to May. A very vigorous, stout grower, and good bearer, mostly in odd years. Mr. Ives has this from Flushing, N. Y., under the name of Oan. One of the best winter sweets in this region.



155. **Newtown Pippin.** This is one of the very best, and yet most uncertain of all apples. With great expense and skill in raising, and by selecting some of the finest specimens, it has brought a high price in foreign markets, which has given it a great name. The fruit is every year in our market, of poor appearance, and selling at common prices. One Baldwin tree, of the same age, will outweigh 4 of them, and out-bear 5 or 6 of them, in good fair fruit. It generally fails in N. England; in some favorable situations in the Middle States, and in some parts of the West, it succeeds well. It requires a warm, deep, strong, friable loam, neither wet nor dry, lime in the soil, or manure, and the highest culture.

Some pomologists reckon two kinds, others think there is but one, modified by various circumstances. The *Green* (dotted outline) is flattish-conical; stem, short, deep cavity; smooth, olive-green. The *Yellow* (the larger outline) is flattish-round, angular; stem short, rather deep cavity; rough, yellow, or greenish-yellow, brownish or red cheek. We have seen another form and color. Roundish-conical, very deep cavity; smooth, wax-like, pale yellow, bright red cheek.

The Newtown Pippin is of medial size; flesh fine,

104. **Chandler.** Large; roundish; pale yellow ground; mostly red; stalk short, in a wide cavity; calyx small, in a wide basin; flesh tender, juicy, rather rich, pleasant, subacid. Nov. to Feb. Moderate grower, great bearer. Popular in some parts of Ct., its origin.

105. **Portsmouth Sweet.** Large; roundish-conical; yellow, striped with scarlet; sweet and excellent. Late fall and winter. We find this very vigorous. New, beautiful, and promising, but not well tested. Origin, Portsmouth, N. H.

106. **Herefordshire Pearmain**, *Royal or Eng. Pearmain.* Medial; oblong-ovate; russety green, mottled with brownish red; stem half inch long, slender; calyx wide, in a narrow plaited basin; very tender, of a pleasant aromatic flavor. Late fall and winter. Good grower, moderate bearer. Dessert and cooking. Very popular in some parts of the Middle States. Foreign.

### WINTER AND SPRING APPLES.

*Early winter* apples, here, are *late fall* and *early winter* in the Southern part of the Middle States, and the same latitude West; and they are *winter* fruits in Me., N. H., Vt., &c.

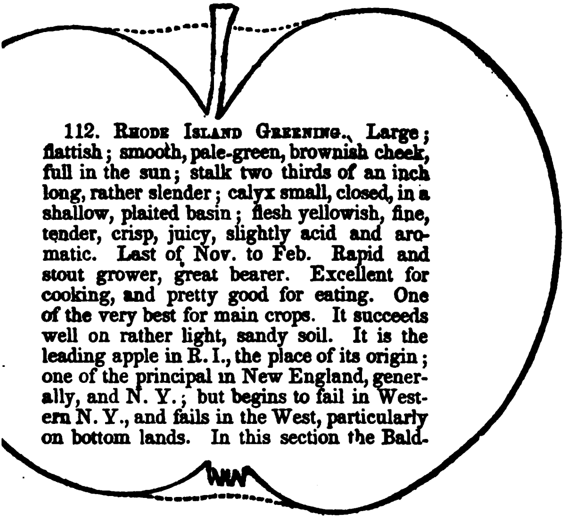
107. **King.** Many of this name. An excellent kind in this market, from N. Y. Large; ovate; yellow, mostly red; tender, rich, mild, inclining to saccharine. Nov. to Jan. As good as the Wine apple, and as showy and better than the 20 Ounce. We have from Ellwanger and Barry, Rochester, N. Y., another **King.** Rather large; roundish-conical; yellow, red in the sun; saccharine blended with sub-acid; excellent. Winter. Another **King**, in Essex Co., Ms., size of Baldwin; form of Greening; bright red, very good; great bearer. Nov. and Dec. And others.

108. **Gloria Mundi**, *Monstrous Pippin.* Extremely large; flattish-round; lemon yellow, brownish in the sun; rather acid. For cooking only. Poor bearer. Last of Nov. to Jan.

109. **Vandevere**, *Oxeye of O.* Large; roundish; yellow ground, clouded and marbled with red, light gray specks; stem half an inch long, in a deep cavity; calyx medial, in a rather shallow basin; flesh yellow, tender, crisp, of a pleasant sprightly flavor. A great bearer. Beecher says, it often hits when others miss. It is a profitable fruit in N. Y., and in the West. Last of Nov. to mid winter. Requires light, rich, sandy soil, else it is liable to blast, and to bitter rot. Native of Wilmington, Del.

**Bailey's Golden Sweet.** Very large; flattish; yel-
pots: cavity broad, medial depth; broad, shallow
rather coarse, of an excellent sweet
v. and nearly through winter. Produc-
rd of Mr. Paul Bailey, Sidney, Me. *Me.*

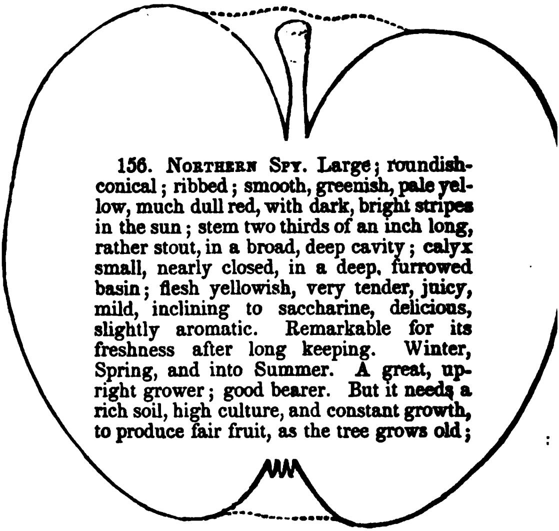
11. **Stevens's Gilliflower.** Large; roundish-conical;
llow cavity and basin; dull whitish ground, striped with
; flesh white, tender, pleasant, sub-acid. Last of Nov.
eb. Good bearer. Raised by Mrs. Olive Stevens, Swe-
, Me. *Me. P. Society.*



112. **Rhode Island Greening.** Large; flattish; smooth, pale-green, brownish cheek, full in the sun; stalk two thirds of an inch long, rather slender; calyx small, closed, in a shallow, plaited basin; flesh yellowish, fine, tender, crisp, juicy, slightly acid and aromatic. Last of Nov. to Feb. Rapid and stout grower, great bearer. Excellent for cooking, and pretty good for eating. One of the very best for main crops. It succeeds well on rather light, sandy soil. It is the leading apple in R. I., the place of its origin; one of the principal in New England, generally, and N. Y.; but begins to fail in Western N. Y., and fails in the West, particularly on bottom lands. In this section the Baldwin more profitable for the market, but this is equally for family use.

**Jonathan.** Medial; roundish-ovate; light yellow,
r covered with lively red, brilliant in the sun; stalk

crisp, juicy, of a rich, sprightly, high aromatic flavor and aroma. Remarkable for retaining its freshness to a late period. Late winter, spring, and to mid-summer. A slow, scrubby grower; moderate bearer. Fruit inclined to be defective under the best management. Origin, Newtown, Long Island.



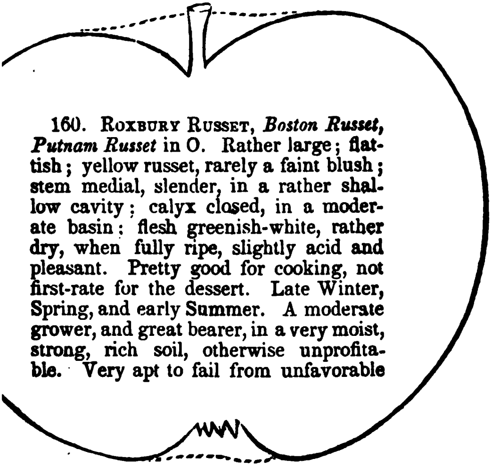
156. **Northern Spy.** Large; roundish-conical; ribbed; smooth, greenish, pale yellow, much dull red, with dark, bright stripes in the sun; stem two thirds of an inch long, rather stout, in a broad, deep cavity; calyx small, nearly closed, in a deep, furrowed basin; flesh yellowish, very tender, juicy, mild, inclining to saccharine, delicious, slightly aromatic. Remarkable for its freshness after long keeping. Winter, Spring, and into Summer. A great, upright grower; good bearer. But it needs a rich soil, high culture, and constant growth, to produce fair fruit, as the tree grows old; and the top must be thinned to expose the fruit to the sun, as it is insipid in the shade. Very hardy in the North, as we find by a few years' experience in Maine. This is a new and excellent fruit, and promises to take the place of Roxbury Russet, and many other late kinds of inferior appearance and quality. Origin, farm of O. Chapin, East Bloomfield, N. Y., from seed from Ct.

157. **Canada Renette,** *White Pippin,* of O., probably. Very large; flattish-conical; ribbed; greenish-yellow, brown

whitish, rather firm, juicy, of a rich, brisk,
. Dec. to May. Usually not fair in this

GILPIN, *Carthouse, Romanite.* Medial; roundish; red
llow. Late Winter and Spring. Better kinds are
its place.

AMERICAN WHITE WINTER CALVILLE. Large; flat-
ınd; pale yellow; flesh white, fine, of a very agreea-
licate, sub-acid flavor. Dec. to May. A strong, fine
, a great and constant bearer. From J. Matthews,
ton, O., in O. Cultivator. Raised by Daniel Miller,
tte Co., O. Humrickhouse says, "origin, Va." It
les the White Calville, of the French; also the Yellow
wer, and the Gate apple.



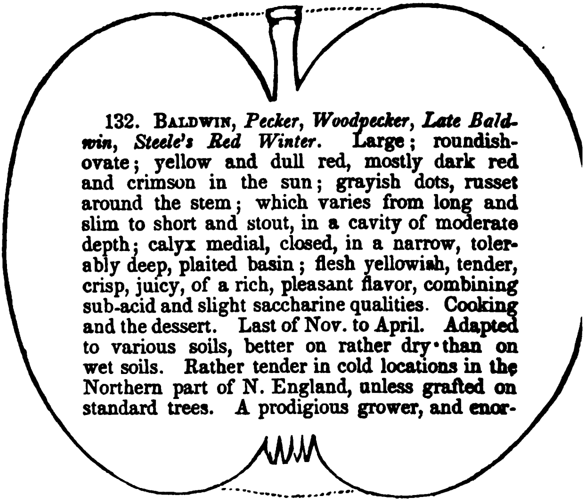
160. ROXBURY RUSSET, *Boston Russet, Putnam Russet* in O. Rather large; flattish; yellow russet, rarely a faint blush; stem medial, slender, in a rather shallow cavity; calyx closed, in a moderate basin; flesh greenish-white, rather dry, when fully ripe, slightly acid and pleasant. Pretty good for cooking, not first-rate for the dessert. Late Winter, Spring, and early Summer. A moderate grower, and great bearer, in a very moist, strong, rich soil, otherwise unprofitable. Very apt to fail from unfavorable
r in spring, or other causes; yet important from its
eping. Origin, Roxbury, Ms.

WIN RUSSET. Large; flattish-round; dark russet;
 cavity; broad, shallow basin; flesh fine, tender,

129. **Golden Pippin.** Small; round; yellow, crisp, rich, brisk, high acid flavor. Winter. Too acid for eating, too small for profit. English.

130. **Pennock's Red Winter.** Large; flattish, deep red, sweetish, dry, poor, subject to bitter rot. Winter. Tree large and productive.

131. **Black apple.** Small; roundish; dark purplish red; flesh firm, wanting flavor. Winter.

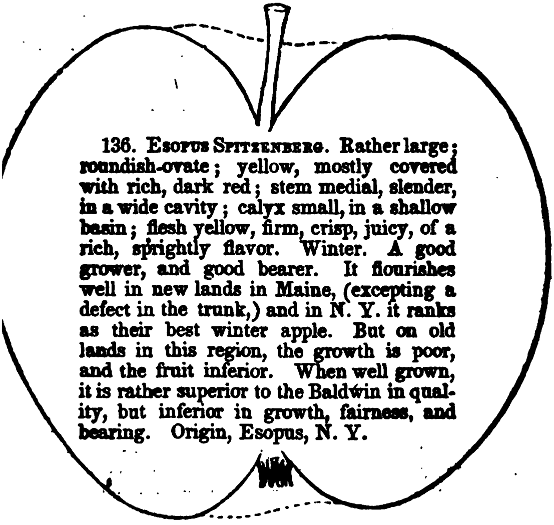


132. **Baldwin**, *Pecker*, *Woodpecker*, *Late Baldwin*, *Steele's Red Winter*. Large; roundish-ovate; yellow and dull red, mostly dark red and crimson in the sun; grayish dots, russet around the stem; which varies from long and slim to short and stout, in a cavity of moderate depth; calyx medial, closed, in a narrow, tolerably deep, plaited basin; flesh yellowish, tender, crisp, juicy, of a rich, pleasant flavor, combining sub-acid and slight saccharine qualities. Cooking and the dessert. Last of Nov. to April. Adapted to various soils, better on rather dry than on wet soils. Rather tender in cold locations in the Northern part of N. England, unless grafted on standard trees. A prodigious grower, and enormous bearer, mostly in even years. (Page 87.) Cultivated far more than any other kind in this region. It does well in N. Y., but begins to fail in the Western part of that State, and is liable to bitter rot in the West. Wilmington and Tewksbury, Ms., seem to have an equal claim to its origin. *Late Baldwin* is a modification of this fruit. The tree more hardy in the North, and bearing more in odd years. The fruit harder, more flat, and keeps longer.

133. Aunt Hannah. Medial; roundish-ovate; straw color; of a very rich, pleasant flavor, Winter. Origin, Essex Co., Ms.

134. Brabant's Bellflower. Very large; roundish; pale yellow, mostly covered with red, fine bloom, full in the sun, numerous dark specks; flesh firm, very juicy, crisp, of a rich, fine, rather acid flavor. Winter. Pretty good, but strangling grower. Hodge recommends it highly. Elliot thinks it valuable. Origin, Holland.

135. Pomme Gris. Small medial; roundish; greenish-gray, russety, reddish in the sun; tender, rich, high flavored. Winter. Rather slow grower, good bearer. An excellent dessert fruit for the North.



136. Esopus Spitzenberg. Rather large; roundish-ovate; yellow, mostly covered with rich, dark red; stem medial, slender, in a wide cavity; calyx small, in a shallow basin; flesh yellow, firm, crisp, juicy, of a rich, sprightly flavor. Winter. A good grower, and good bearer. It flourishes well in new lands in Maine, (excepting a defect in the trunk,) and in N. Y. it ranks as their best winter apple. But on old lands in this region, the growth is poor, and the fruit inferior. When well grown, it is rather superior to the Baldwin in quality, but inferior in growth, fairness, and bearing. Origin, Esopus, N. Y.

137. The Flushing and Kaighn's Spitzenbergs, are inferior to the foregoing, and in use nearly at the same time.

| Mar-ket. | Home Use. | Qual-ity. | TABLE OF APPLES, In order of ripening. (See page 11.) | |
|---|---|---|---|---|
| | | | *Summer Apples.* | |
| | | 3 | White Juneating, | July 10 to 30 |
| | | 1 | *Early H*arvest, | July 15 to Aug. 10 |
| | | | Summer Sweet, | “ “ “ “ “ |
| 1 | 3 | 2 | *Red Astrac*han, | “ “ “ “ “ |
| | | | Early Red Margaret, | “ “ “ “ “ |
| | | | Red Quarrenden, | “ 25 “ “ 15 |
| 6 | 6 | | Cole*'s* Q*ui*nce, | Into Sept. |
| | | | Bevan, | “ “ |
| 2 | 2 | 1 | Sweet *Bough*, | During Aug. |
| 3 | | 1 | Williams, | “ “ |
| | 1 | 1 | Summer Rose, | “ “ |
| | | 1 | Early Strawberry, | “ “ |
| | | 1 | Benoni. | Aug. 12 to Sept. 15 |
| 4 | 4 | | Found*ling*, | “ “ “ “ 30 |
| | | 2 | *Dutchess of Oldenburg*, | “ 15 “ “ 15 |
| | 5 | 1 | Mona*met Swee*ting, | “ “ “ “ “ |
| 5 | | 1 | *Golden* Sweet, | “ 20 “ “ 20 |
| | | 1 | Summer Pear*main*, | Last of Aug. and Sept. |
| | | | *Fall Apples.* | |
| 10 | 10 | 1 | Richardson, | Last of Aug. and Sept. |
| 13 | 12 | | Bars, | “ “ “ “ “ |
| | | | Summer Bellflower, | “ “ “ “ “ |
| | 7 | 1 | Early Joe, | Sept. |
| | 11 | 1 | Mexico, | “ |
| | | | *St. Lawrence*, | “ |
| | 4 | 1 | Garden Royal, | “ |
| 11 | 6 | 1 | *Long Stem*, | Sept. and into Oct. |
| 7 | 9 | 1 | Super*b Sweet*, | “ “ “ “ |
| 3 | 5 | 1 | *Porter*, | “ “ “ “ |
| 12 | | 2 to 3 | *Tufts's Bal*dwin, | “ “ “ “ |
| | | | Fairbanks, | “ “ “ “ |
| | | | Fall Wine, | Sept. and Oct. |
| | | | Lowell, | “ “ “ |
| 4 | 3 | 1 | Sassaf*ras Swee*ting, | “ “ “ |
| | | | Moses Wood, | “ “ “ |
| | | | Briggs's Auburn, | “ “ “ |
| | | 1 | *Jersey Swee*ting, | “ “ “ |
| 9 | | | Lel*and Pip*pin, | Sept. 15 and Oct. |
| | | | Fall Strawberry, | “ “ “ “ |
| 1 | 2 | 1 | Gra*venste*in, | “ “ “ “ |
| | | | Pomme Royale, | Last Sept. “ “ |
| | | | Chapman's Orange, | Fall. |
| | | | Winthrop Pearmain, | Last Sept. and into Nov. |
| | 13 | 1 | Magnolia, | Oct. to middle of “ |
| | | 1 | Hawley, | Oct. and Nov. |
| | | | Thompkins, | “ “ “ |
| 2 | | 1 | Jewett's Red, | “ “ “ |
| 8 | | 1 | Hubbardston Nonsuch, | “ “ “ |
| | | 2 to 4 | Maiden's Blush, | “ “ “ |

| Mar-ket. | Home use. | Qual-ity. | TABLE OF APPLES, In order of ripening. (See page 11.) | |
|---|---|---|---|---|
| | | | *Fall Apples.* | |
| | | 1 | Cooper, | Oct. and Nov. |
| 6 | 1 | 1 | Mother, | Last of Oct. to Jan. |
| | | | Rambo, | " " " " " |
| | | 1 | *Fall* Harvey, | " " " " " |
| | | 1 | Fall P*ippin*, | " " " " " |
| | | 1 | Fameuse, | " " " " " |
| 5 | 8 | 1 | Hurlbut. | " " " " " |
| | | 1 | Yellow Bellflower, | Nov. to Jan. |
| | | 1 | Belmont, | Late fall and early winter. |
| | | | *Winter Apples.* | |
| 6 | 5 | 1 | Mel*vin* *Sweet*, | Late fall to mid winter. |
| | | 1 | Vandevere, | Last of Nov. to mid winter. |
| | | | Bailey's Golden Sweet, | Last of Nov. to Feb. |
| | | | Stevens's Gilliflower. | " " " " " |
| 2 | 1 | 1 | *Rhode Isl*and Greening, | " " " " " |
| | | 1 | Jonathan, | " " " " " |
| 7 | 9 | 1 | Melon, | Last of Nov. to March. |
| 8 | 10 | 1½ | Mi*nister*, | " " " " " |
| | | 1 | Peck's Pleasant, | Early winter. |
| | | 1 | Newtown Spitzenberg, | " " |
| | 8 | 1 | Danver*s* *Winter Sweet*, | Winter. |
| | | 1½ | *Ribson* Pippin, | " |
| | | 1 | Swaar, | " |
| | | 1 | Old Nonsuch, | " |
| 10 | 11 | 1 | Westfield Seek-no-further, | " |
| | | | Brabant's Bellflower, | " |
| 1 | 4 | 1½ | Bal*dwin*, | " |
| | | | *Wine*sap, | " |
| | 11 | 1 | Leice*ster* *Sweet*ing, | " |
| | | 1 | Esop*us* *Spitz*enberg, | Dec. to April. |
| | | 1 | Winter Sweet Paradise, | Winter and early spring. |
| 3 | | 1 | *Talman Sweet*ing, | " " " " |
| | | | Woolman's Long, | " " " " |
| | | 1 | Lady Apple, | " " " " |
| | | 1½ | Domine, | " " " " |
| 9 | 3 | 1 | Ladies' Sweeting, | " " " " |
| | 6 | | American Golden Russet, | " " " " |
| | | 1 | *Seaver* Sweet, | " " " " |
| | | | Canada Renette, | " " " " |
| | | | Am. White Winter Calville, | " " " " |
| | | 1 | Newtown Pippin, | Late winter and spring. |
| | | | Win Russet, | " " " " |
| 4 | 1 | 1 | Northern Spy, | Late winter, spring, and summer. |
| | | 2 to 4 | Tewksbury Winter Blush, | " " " " " |
| | | | Raule's Jenette, | " " " " " |
| 5 | 7 | 2 | *Roxbury* Russet, | " " " " " |

*Summer Apples.* Early Harvest is popular in the Middle Region. Red Astrachan is more promising here.

*Fall.* Richardson, Summer Bellflower, Sassafras Sweeting, Hawley, Mother, and other new kinds, are of excellent quality, but not generally known as to their habits.

*Winter.* Ladies' Sweeting, Northern Spy, and some others, are beautiful and excellent fruits, but have not been tried extensively. We have but few every way excellent for market.

Ernst recommends Early Red Margaret, Sweet Bough, Prince's Early Harvest, Summer Rose, Fall Pippin, Newtown Spitzenberg, Yellow Bellflower, Woolman's Long, (Detroit of the West,) Golden Russet, Broadwell, Winesap, Yellow Newtown Pippin.

Kirtland and Elliott recommend the following varieties —

Summer. For the *Garden* — Summer Rose, Early Harvest, Red Astrachan, American Summer Pearmain, Early Joe, Lowell. For *Market* — White Juneating, Red Astrachan, Early Harvest, Williams, Red Quarrenden, Lowell.

Fall. For the *Garden* — Gravenstein, Fall Pippin, Fall Strawberry, Pomme Royale, Porter, Jersey Sweeting, Fameuse, Fall Harvey, Maiden's Blush, Rambo, Fall Seek-no-further, Fall Wine. *For Market*, we prefer these to showy inferior fruits.

Winter. For the *Garden* — Belmont, Swaar, Old Nonsuch, Hubbardston Nonsuch, Jonathan, Peck's Pleasant, Rhode Island Greening, Putnam's Russet, (*Roxbury Russet*, Ed.,) Westfield Seek-no-further, Wine, Danvers Winter Sweeting, Wood's Greening, Tewksbury Winter Blush, Lady Apple, Fort Miami. For the *Market*, substitute the Baldwin for Danvers Winter Sweet, and the Hollow Crown Pearmain for Wood's Greening.

The Pomological Convention at Buffalo, recommend, as first-rate, Early Harvest, Pomme Royale, Early Joe, Early Strawberry, Sweet Bough, Sine-Qua-Non, Summer Rose, Fameuse, Rhode Island Greening, Westfield Seek-no-further, Vandevere, Gravenstein, Esopus Spitzenberg, Beauty of the West, Fall Pippin, Late Strawberry, Swaar, Belmont, Mother Apple, Jonathan, Porter, Rambo, Hubbardston Nonsuch, American Golden Russet, Jersey Sweeting, American Summer Pearmain, Baldwin first-rate in Ms., and in N. Y., but not in O.

The National Convention of Fruit Growers, at New York, recommend as first-rate, Early Harvest, Yellow Bough, American Summer Pearmain, Summer Rose, Early Strawberry, Gravenstein, Fall Pippin, Rhode Island Greening, Baldwin, Roxbury Russet. For *Particular Locations*, Yellow Bellflower, Esopus Spitzenberg, Newtown Pippin.

Barry recommends, for *Summer*, Early Harvest, Early Strawberry, Early Sweet Bough, Red Astrachan, Early Joe, Duchess of Oldenburg. For *Fall*, Hawley, Pomme Royale, Gravenstein, St. Lawrence, Fall Pippin. For *Winter*, Norton's Melon, (Melon,) Golden Reinette, Canada Reinette, Nonsuch, Seek-no-further, Esopus Spitzenberg, Swaar, Ladies' Sweeting, Northern Spy.

## THE PEAR, (*Pyrus communis.*)

The pear is a tall tree, of upright growth, generally smaller than the apple, yet we have some specimens of a large size. It is a native of Europe and Asia, but not of Africa and America. In its original state, the fruit was austere and useless for the dessert. Gradual improvements have been made, so that it is now rich, melting and delicious, and in some of our finest kinds, it seems to be almost in a state of perfection. Yet constant improvements are going on, in the chance and artificial or scientific production of new varieties, furnishing many of the highest rank, adapted to all seasons and purposes. At present, the zeal for producing new kinds, and procuring and cultivating the best varieties, amounts, with some, to the ruling passion; and we are sure that the result will be a most abundant production and diffusion of the best of fruits throughout the land.

Under favorable circumstances, the pear forms a large and long-lived tree. Some are said to be several hundred years old. A perry pear tree in Herefordshire, Eng., produced 15 hogsheads of perry in one year. The branches bent down and took root, covering half an acre of land. The Endicott pear tree is still flourishing in Danvers, Ms. It was imported by Gov. Endicott, in 1628.

Near Vincennes, Ill., is a pear tree, 40 or 50 years old, that is 10 feet in circumference, and its branches extend 60 feet. In 1834, it yielded 184 bushels. The original Harvard pear tree is 9 feet in circumference. We have a wild pear tree that is over 7 feet round, and that notable personage, the "oldest inhabitant," cannot remember when it was much less. By good culture we have given it a start, and it has become *young* and vigorous. It is represented by the figure in the beginning of this article. It is the be
of the pear tree, of any very large and old tree, that
seen. Some branches are bent with age and hea

The pear tree is frequently uncertain; sometimes dying early from heat, cold, or causes unknown, and in other cases living to a great age, attaining a large size, and producing enormous crops. Some varieties disappear after a few years, or linger along, mere cumberers of the ground, even with apparently the best attention, while others flourish, are productive, and live long under neglect, or bad management. In some cases, the apparently good care that pear trees receive, is like stuffing a child with sweetmeats, and shutting it up in a warm room. The fruit is still more uncertain, particularly the finest kinds, and more especially those of foreign origin.

As some pears ripen in July and August, a great variety in the fall, several fine ones for winter, and a few for spring, we can have this delicious fruit in every season, though it is hardly seen in spring and early summer. Yet ere long the many new varieties will fill up this vacuity.

USES. The pear is a most delicious fruit for the dessert, and the finest kinds sell at enormous prices — $10 to $15 per barrel, and at $1 or $2 a dozen. Some retail at 25 cents each. Several varieties are highly valuable for preserves, marmalade, sauces, jellies, and for baking, boiling, stewing, &c. Some are excellent in pies and tarts. They are good for condiments and seasoning in various preparations. The juice is expressed and prepared in the same way as cider from apples, and is called perry. It is of higher character, but of less body or strength. It makes a fine, pleasant vinegar.

SOIL AND LOCATION. These should be generally the same as for the apple, but the pear is more delicate, and will not bear the disadvantages of a dry or wet soil so well as the apple. Yet some few native kinds are remarkably hardy and will grow anywhere; while most of the best foreign varieties, and some natives, need sheltered situations in cities or towns, as they dwindle and shortly disappear under common orchard culture and exposure. Side hills, or hills of moderate elevation, are favorable locations.

The pear requires a deep friable loam, rather moist, but neither wet nor dry, with a rather dry sub-soil, as its roots run deep; yet a porous sub-soil is not good; a hard pan is preferable. A deep yellow loam is excellent. The largest natural trees are on strong, moist soils. The original Harvard tree is on a very hard, clayey soil, but elevated on a lge. Our large tree is on a strong, moist yellow loam, clining to marl, and around it we raise our best seedlings. s iron is beneficial to the pear, a ferruginous soil is favorable. 'e find it very vigorous on such soils. Different varieties quire different soil, but the peculiar nature of each kind is t well ascertained.

PROPAGATION. The fine varieties are propagated by bud- and grafting, and for stocks, seedlings are generally Sometimes suckers have good roots and answer well. ect seeds from vigorous trees, and the stocks will be more thrifty. As soon as pears are rotten, mash up and wash out the seeds, or wash the seeds from e before it ferments; in both cases, clean the seeds as as possible after applying water to them. Partially dry so as to clean out the stems and other rubbish. Then w, if ready; if not, put the seeds into loam or fine sand, d keep moderately moist, in the cellar, or in a cool place t door, or buried in the ground, till sowing time, whether be in fall, winter, or spring. Drying injures pear seed, t not apple seed; but in both cases they must be kept st through winter, or they will not vegetate.

y washing pomace or mashed pears with much water d a little pomace, the seed will sink, and much of the mace and mucilage, or thick matter, will float in the water, d may be turned off. Repeat the washing till the seed is n. Drain and partially dry, in a day or so, and put in n or sow immediately.

owing seed in the fall is best, in case the spring be back- ard, and sowing delayed from wet weather, as the hot sun June may kill the tender plants that start late. On the ntrary, if the land be prepared in the fall, and there is a od chance to sow early in spring, on a newly ploughed il, the trees will grow better, and the labor of hoeing will less. The soil for raising seedlings should be a deep rich am, rather moist, though they may be raised on any land good condition. Any good tillage will generally produce od pear stocks, but moist land is best.

Sow thick, in drills 12, 15, or 18 inches apart, or put double ws a foot apart, with 2 or 3 feet between. Some sow half ple seeds among the pears, and say that they will then and out the first winter without being thrown out of the ound. The soil should be stirred often, especially in time drought.

If the plants, or *pips*, be transplanted when only a few inches high, it will check the tap root, and the little tree will throw out lateral roots, which will be a great advantage on transplanting, for, without this process, there will often be a long, smooth tap root, with no laterals to sustain the plant. The plants may be transplanted with a trowel, from one row to another, first preparing the vacant row by digging the soil up lightly. Or they may be moved from one piece of land to another. But a more expeditious mode is to let them stand till 4 or 5 inches high, and then cut off the tap root about 4 inches below the surface, with a sharp trowel.

As the young pear trees, the first winter, are liable to be thrown out of the ground, or killed by severe cold, (one nurseryman lost 12,000 in one winter,) they should be protected in the cellar, or buried in the ground. In the cellar they should be put into fine sand or yellow loam, in layers, the roots well covered, and the earth kept tolerably moist only. If kept wet, the roots will rot; if too dry, they will die. We find the safest and most convenient way to cover them up about a foot deep, out door, in a light soil. (Page 49.)

Set out pear stocks in nursery rows, in the same way as apple stocks, (page 84,) and in due time bud or graft in the same manner. In setting pear stocks, which often have a long tap root, without laterals, do not cut off the root, but put it down obliquely, in the manner of a cutting, turning the stock straight upward, when within 2 or 3 inches of the surface. Set on rather moist soil. By cutting off the tap root of pears, many of the fibrous roots are lost, and the tree is often lost or stinted.

PEARS ON THE QUINCE. Almost every kind of pear grows and bears well on the quince, and as they are thus made into dwarfs, most kinds produce finer specimens in this way than on their own bottoms; and some European kinds will not succeed in any other way. There are several advantages in cultivating pears on quince stocks. They bear much earlier, (in this way new fruits may soon be tested,) usually produce larger and fairer fruit, bear more abundantly, and as this mode forms dwarfs, it affords the advantage of many kinds on small premises. Some pears on the quince come into full bearing in 2 or 3 years after set.

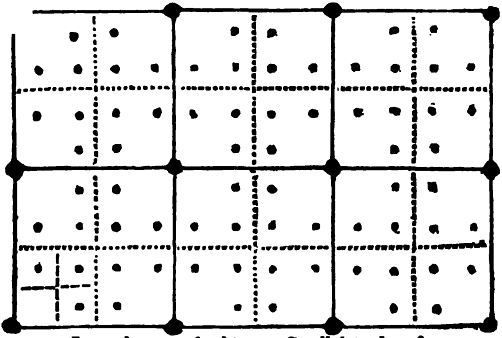
Some slow growing kinds, like the Seckel, do not flourish well on the quince, excepting by *double working*, that is, by working a vigorous kind on the quince, and the slow grower hat, which gives it a more vigorous growth. Another ovement is by re-rooting, (page 47,) which not only to the growth of the pear, but to its longevity.

There are disadvantages in having the pear on the quince, ss re-rooting is effected, as the quince is short-lived, ch of course brings the pear on it to an early termina-ion. A few years ago it was thought that the pear on the uince would last only 7 or 8 years, but in many cases they ontinue flourishing and productive for 20 years. For gen- l orchard culture, and permanent produce, the pear stock uld be preferred; then large, durable, and productive trees ay be formed.

PLANTING. Some vigorous kinds need to be two rods part, yet few grow so large, and there is generally more ofit in setting nearer. If a few are inclined to grow large, nd they are superior to others around them, the others, fter many years, in which they may have been profitable, y be removed, or *head-in* the branches. (Page 183.)

ome of the vigorous, large kinds are 12 or 15 years in oming into bearing, and as much longer in coming into ull bearing; during this time a large amount of fruit may e produced on early bearing trees by close planting.

Generally, a rod, to a rod and a half, is sufficient. On the nce, half a rod will suffice. We give the following as a cessful and profitable mode of culture, both for early fit or quick return, and for the future. Set standard



*Large dots, standard trees. Small dots, dwarfs.*

trees on pear stocks, two rods apart each way. Then set 3 pears on the quince, to each square rod, as represented in the figure. By this system, there would be 40 standards and 480 dwarfs to the acre. Each square rod is supposed to be divided into quarters, and a dwarf tree set in each quarter, excepting that next the standard, as represented by the square or rod in the lower corner of the figure, on the left.

In two or three years, the dwarf trees will come into bearing; and if they yield only a peck or a half bushel each, they would produce a valuable crop while the standards were coming forward; and besides the profit, there would be much pleasure in having fruit early, and testing various kinds, instead of waiting 8, 10, 12, and sometimes 15 years, for standards to bear. When the trees interfere, the poorest should be shortened in, by cutting off the ends of the limbs, and removed when all the room is needed for the larger trees. There will be a great advantage in having a constant income after a very few years, and while the standards are attaining a good growth, so as to be productive.

CULTURE AND MANURE. Good, thorough culture, and moderate manuring are necessary, but high culture should be avoided, as the pear under high culture is liable to blight. (Page 148.) Hence, the slow-growing varieties are more exempt from this malady than the vigorous kinds. From some experiments iron is a good manure for the pear, but a little is sufficient. Pieces of worthless old iron may be laid around the trees, or the refuse from the blacksmith's forge and shop, or from machine shops and founderies, may be used when iron is wanting in the soil. The land should be constantly tilled among pear trees, and the manure should be such as to give a moderate and constant growth.

Stable manure, composted with peat or mud, is good for the main body on dry land, or with sand and gravel for moist land, and loam for a medial soil, or it is good for either. Besides these, use lime, ashes, salt, plaster, for high land; charcoal and a few coal ashes, especially for wet, bone manure, soap-suds, sink water, night soil, &c., &c., made into compost. (Page 53.) The following table shows the composition of the ashes of the pear, and may give light as to manuring. Apply potash in wood ashes; phosphate of lime in bone manure; carbonic acid in charcoal and various manures.

*Analysis of the Ash of the Pear.*

| | Sap wood. | Heart wood. | Bark of the trunk. |
|---|---|---|---|
| | 22.25 | 26.94 | 6.20 |
| | 1.84 | | |
| e, | 0.31 | 0.21 | 1.70 |
| ic acid, | 0.50 | 0.45 | 1.80 |
| ate of lime, | 27.22 | 20.40 | 6.50 |
| ate of peroxide | 0.31 | 0.80 | |
| c acid, | 27.69 | 25.48 | 37.29 |
| | 12.64 | 13.14 | 30.36 |
| ia, | 3.00 | 2.93 | 9.40 |
| | 0.30 | 0.30 | 0.40 |
| | 0.17 | 1.00 | 0.65 |
| matter, | 4.02 | 5.00 | 4.20 |
| | 100.25 | 96.65 | 98.50 |

oot of the pear contains a much larger proportion , some more chlorine, more phosphate of lime, less ss magnesia, and more silex. Wilder said that he s that cracked, and he applied a compost of iron bone manure with surprising success.

ING. (See page 57.) The pear needs but little pruning ome may be necessary to give form; and old rees may be improved by this process applied mod- Never prune much in one year, but rather a little y. Do not cut much even in grafting, but take two years to change the top of a large tree, and then it first, many little limbs and twigs, to keep the growth, and sustain the tree in its uniform progress.

IT. This general term is applied to various diseases ions of trees that produce decay in a part or all of . It is so vague that it is only another name for or death. It affects pear trees mostly, but cherry, nd quince trees are also liable to its effects. This is subject, and volumes have been written upon it, with e profit.

*Sap Blight.* When trees grow rapidly in fall, rm wet weather, and there comes a sudden freeze e tender wood, they are liable to be injured or killed. en in winter, in warm, sunny weather, the sap nd a sudden freeze may be destructive, more especially if hot sunshine again succeed, while the tree is frozen. A late spring frost may produce sap blight. Cold weather in winter, when the ground is bare, may freeze deeply, and produce blight by freezing the roots, after a late and tender growth in the fall. We have seen many fruit trees killed in a single garden. The trees leaved out, blossomed, and set fruit well, and died suddenly. The roots were affected. Rapid growing trees are most liable to frost blight.

*Insect Blight.* The *Scolytus pyri* attacks the shoots of trees, mostly pear, in June. The eggs are laid close to a bud; as they are hatched, the grub penetrates the shoot, perforating and destroying it. The leaves wither suddenly, the wood shrivels and turns dark. The only remedy is to cut off the shoot immediately, several inches below the injury, and burn it. Barry thinks that other insects than the Scolytus suddenly destroy trees the latter part of summer, when growing luxuriantly, in warm weather, in rich moist soils, and in sheltered situations. But many call this the

*Fire Blight.* In summer, particularly in the hottest part, in extremely growing weather, pear and quince trees, of vigorous growth, are sometimes killed in their shoots and limbs, as suddenly as by an electric blast. Some attribute this to insects, and others to the hot sun. In several cases, insects of different sorts have been found in cases of blight, and whether a cause or consequence of the disease is not known.

*Atmospheric Blight.* But we believe that a peculiar state of the atmosphere and weather produces blight in the pear and quince, which are too tender to endure a great degree of heat and sultriness, when in a tender, plethoric state. Springer and Ernst have similar views.

In our early days, while living in the interior, where most farmers had a few pear trees growing in their orchards, generally in good soil, without culture or manure, we never saw a case of blight till we put pear trees in a rich garden, which all died of blight, while some of the same lot, set in a pasture, lived and flourished. Springer thinks the blight is caused by plethora or vegetable apoplexy. When he planted on rather poor soil, no blight. On rich soils his trees grew three times as fast, and blight killed them. Seckel and White Doyenne (St. Michael) grow moderately and do not blight.

*Remedy*. Let the causes be what they may, all cultivators agree in the remedy. In most cases, blight, like the potato rot, is a disease of the circulation, and will soon affect the whole tree. And insects, worse still, spread from tree to tree. Cut off the affected part, as soon as possible, a foot or more below the affection, and burn it. If it spreads, cut again. Examine daily, and cut promptly, as this is important to success.

*Preventive*. Set trees on new land, if convenient, or in pastures or fields that have been tilled none or little, select a good soil and location, cultivate well, manure moderately, and with a variety of materials, and give a regular moderate growth only.

INSECTS are not very common on the pear. For slugs, sprinkle on strong dry wood ashes or freshly slacked lime. For aphides, use whale oil soap (page 73;) and this will be good for nearly all insects that infest the pear. For caterpillars that spread webs over the trees, tear their nests in pieces, at an early stage, to prevent their extension.

UNCERTAINTY OF PEARS. The pear is an uncertain fruit. There is more or less trouble with it from the time the seeds are taken from the tree, till the fruit is ripened for eating. The seeds are liable to injury in the pears or pomace, and when cleaned out they are injured by drying, and still more by attempts to keep them partially moist. The seeds often fail. The young trees often blight even the first year. Sometimes a hot sun or other cause kills them all on dry land. We have known cases in which not a single tree has been raised from several quarts of good seed, sufficient for 10,000 stocks.

If left out the first winter, the young seedlings are often killed or thrown out of the ground. Sometimes seedlings, saved well till the second year, will not grow, and this is often the case at a more advanced stage, especially on dry land. Trees are often killed with blight, drought, heat, cold, or other cause, or they become stinted and unproductive.

The fruit of many excellent kinds is very liable to blast or crack, or be injuriously affected by too wet or too dry soil, or by unfavorable seasons, or other adverse circumstances. It is difficult to grow them to perfection, and to gather at the right time, and ripen well.

So that, as a general thing, it costs far more to raise pears than apples; yet they are so delicious, that ev [illegible] has land, should cultivate them, and carefully select the most hardy. We name the difficulties, that cultivators may meet and conquer them, and not be discouraged by them, for the difficulties are often the result of neglect or bad management.

GATHERING, PRESERVING, AND RIPENING. Most fruits are better for coming to full perfection on the tree, but the pear is generally best when gathered before perfectly mature, and ripened in the house. When allowed to remain on the tree, till fully ripe, most varieties become dry and insipid. Some kinds need to be picked so early that they seem to be in their full vigor. A few only ripen best on the tree.

In ripening in the house, a few only do better on exposure to light and air. Most kinds do better in close barrels, boxes, or in cotton batting, or other covering, and in the dark. Late pears should be kept in a cool cellar, not very damp, or in a cool room, where they will not freeze, and when the period of ripening approaches, which may be known, or may be indicated in the earliest specimens, carry them into a warm room or closet, about as warm as is comfortable for a family, and keep them close in a box or drawer, wrapped in cotton, or clean paper, cloth, &c., till mellow.

If kept in the cellar, or cold room, beyond the usual period of ripening, they will be dry and insipid; and if brought forward too early, they will be too fresh and green. It requires as much skill to ripen pears as to raise them. Some kinds will be good if ripened in succession, as wanted, through the winter. The ripening room should be neither very dry nor moist. Winter pears should hang late on the tree, unless there is danger from frost, and they should be picked on a clear day; and, in all cases, pears should be gathered and handled with the greatest care, to prevent bruising, which both induces decay, and renders the fruit inferior.

Walker has made many nice experiments on keeping and ripening pears.

VARIETIES. More than 800 kinds have been tried in this country, not one twentieth of which are worthy of cultivation, unless one would spend his time and money in experiments. Most of these varieties are from Europe, and after all that has been done to ransack that vast country in search of new fruits, native pears of this country, far more valua-
have been neglected; some have flourished and disap-

peared, leaving not a trace behind. Scarcely a foreign pear can be found that has not some defection in tree or fruit, in orchard culture; — even the famous Bartlett was much injured by the winter of 1847—8. Beurre Diet seldom comes to perfection. Napoleon, Easter Beurre, Duchess de Angouleme, Maria Louise, and many others often fail by not ripening well, yet we have some foreign pears of the greatest excellence, particularly for mild climates, and for warm locations in the North; and they afford the advantage of furnishing seeds for new varieties.

We have a number of fine native pears, and are getting more, and there are many, even old trees, that have not yet been made public. Almost every year we collect some valuable native, and now have a number of new kinds on trial, that are very promising but not well tested.

Amateurs have done much by the introduction of foreign pears, but some have compromised this advantage, in some measure, by too hastily recommending numerous kinds that are comparatively worthless, which has led to disappointment and discouragement. More attention to our best native pears will lead to improvement, and a fair trial of foreign kinds, by exposure in orchard culture, should precede their recommendation for general use.

Some fine pears do well in sheltered locations, and are adapted to the garden, but are not profitable for general culture, while some hardy kinds, hardly so good in quality, are more profitable for general orchard culture.

## SUMMER PEARS.

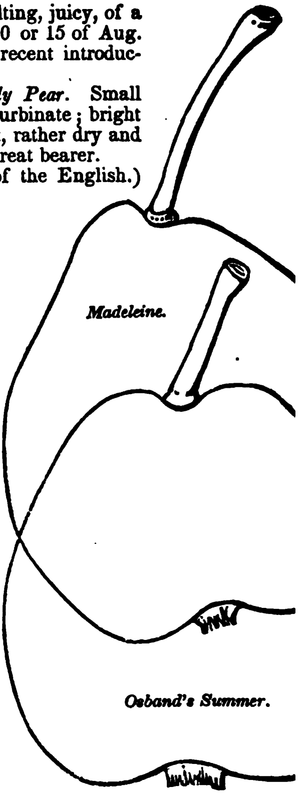
1. **MADELEINE**, *Citron des Carmes*. Rather small; long turbinate; greenish lemon yellow, seldom a brownish cheek; stem long, stout; calyx small, nearly even with the surface; flesh whitish, melting, juicy, of sweet delicate flavor. 25 July to August 10. Tree very vigorous and productive. The best very early pear, yet it is liable to blight in tree and very little in fruit. Does well both on the pear and quince. Ripen in the house. Foreign. (See outline, next page.)

2. **STRIPED MADELEINE**. Similar to above or a little better; shorter; striped; tree less liable to blight. So says Manning.

3. **SUMMER DOYENNE**, *Summer St. Michael*. Small: shaped like the white Doyenne; smooth, clear yellow,

red; flesh white, melting, juicy, of a sweet rich flavor. 10 or 15 of Aug. A good bearer. Of recent introduction.

4. SUGAR TOP, *July Pear*. Small medial; roundish — turbinate; bright yellow; tender, sweet, rather dry and poor. Last July. Great bearer.



*Madeleine.*

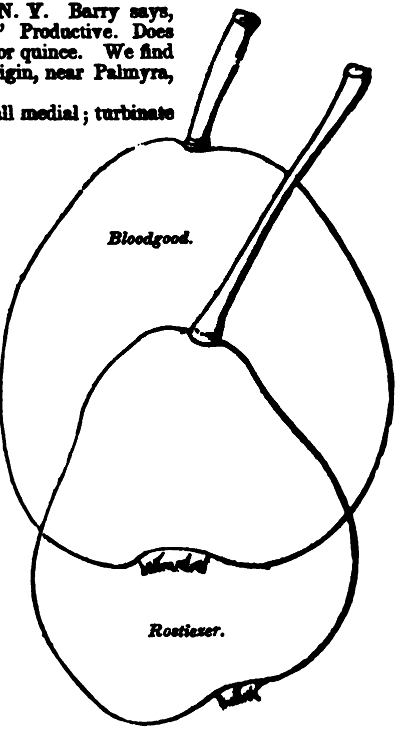
*Osband's Summer.*

5. JARGONELLE, (of the English.) Rather large; long pyriform; greenish yellow, brown in the sun; stem 2 inches, long, slender; in a small basin; yellowish white, coarse, juicy, pleasant flavor. Former part of Aug. Second rate, rots at the core, yet rather profitable for the market. New and better kinds will take its place. Ripens in the house. Better on the quince.

6. ZOAR SEEDLING. Medial; pyriform; light yellow, beautiful red cheek; crisp, juicy, sweet, sprightly, flavor. Aug. 5 to 20. Elliott says nothing at its time excels it. Origin, Zoar, O. Aug. 1 to 5 there.

7. OSBAND'S SUMMER, *Summer Virgalieu.* Small medial; obovate; cle low, green dots, red cheek; stem an inch long, stout, in a cavity; calyx large, basin shallow. flesh white, juic rich sugary, slightly musky flavor. 10 or 15 to 30

in Western N. Y. Barry says, bly first-rate." Productive. Does rell on pear or quince. We find grower. Origin, near Palmyra,



**ODGOOD.** Small medial; turbinate te; yellow, half russet, inch long, bliquely set; , in slight melting, h a sweet, tic ; ust- ug. 10 to 25. rate grower rer. Ripen ouse. One best early rticularly for States. In , generally it variable. rather dry igin. Long

**MUSKINGUM.** rge; round- vate; green- w, with ma- specks, and sset, seldom ish blush; g, medial, in cavity; ca- open, in a slight or with no depression; flesh yel- te, very fine, tender, melting, juicy, of a sweet, tic flavor. 15 Aug. to 10th Sept. Native of O. perfectly hardy here and a great grower. Prob- adapted to a still more northern culture.

**OYAMENSING.** Large medial; roundish-oval; lemon melting, buttery, well flavored. Latter part of l 1st of Sept. Origin, Philadelphia.

11. Julienne. Medial; obovate; bright yellow; sweet and pleasant. Latter part of Aug. and 1st of Sept. Varying from almost first to second-rate. Great bearer. Pretty good for market. Ripen in the house. Foreign.

12. Belle of Brussels. Rather large; pyriform; light yellow; melting, juicy, sweet. Latter part of Aug. Great grower and bearer. Worthless here, but rather popular in Western N. Y., and in some sections of the West.

13. Dorr. Large; obtuse-pyriform; pale yellow, broad reddish blush; stem an inch long, rather stout, in a slight depression; calyx large, open, in a narrow, rather deep basin; flesh rather coarse and dry, but sweet and pleasant. For cooking and eating. Latter part of Aug. As it is very hardy, a great grower and bearer, large, fair, and handsome, it is profitable for the market. Origin, N. H.

14. Bezi Blanc. Similar to Bartlett in size, form, and color; hardly so good, but it is a fortnight earlier. Aug. 15 to 30. Foreign.

15. Rostiezer. Small; pyriform; yellowish-green; much russet, dark brown cheek; stalk very long, slender; calyx open, in slight depression; melting, extremely juicy, of a rich, sweet aromatic flavor. Last of Aug. and 1st of Sept. One of the best summer pears; rather small for market. Prodigious grower, and great bearer. (*See last page.*)

16. Wadleigh. Rather small; roundish-obovate; yellow; stem short, stout; slight, plaited basin; melting, tender, very juicy, of a delicious flavor. One of the best in its season. Last of Aug. and 1st of Sept. We find it hardy and vigorous. New. Origin, N. H.

17. Windsor, *Bell* in N. England. Rather large; bell-shaped; yellowish-green, tinted with orange in the sun; coarse at the core, tender, sweet, rather astringent. Poor. Last of Aug., 1st Sept. Great grower and bearer.

18. Summer Frank Real. Rather small; obovate; greenish yellow, brownish dots; stem short, thick, in a slight cavity; a small furrowed basin; flesh rather rough, tender, melting, sugary. Last of Aug., 1st. of Sept. Succeeds on the quince or pear. Foreign.

19. Tyson. Medial; short pyriform; light yellow, russet patches, red in the sun; stem medial, set on a point; basin broad and shallow; flesh white, melting, very juicy, sweet, with a very delicious aromatic flavor. Latter part of Aug., 1st of Sept. The original tree in Jenkinstown, Pa., is 6 feet round. (*See cut on the following page.*)

's SEEDLING. Small; turbi-
h long, in a slight cavity;
; very smooth, yellow, minute
russet around the stem; flesh
icy, melting, of a sweet, sprightly
Aug. 20 to Sept.
urdy, vigorous,
luctive. Origi-
Gen. H. A. S.
Roxbury, Ms.
RN. Rather
pyriform;
yellow, with
specks; stem
obliquely set;
small, slightly
esh white, ten-
lting, juicy, of
lively, aromatic
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The last seven
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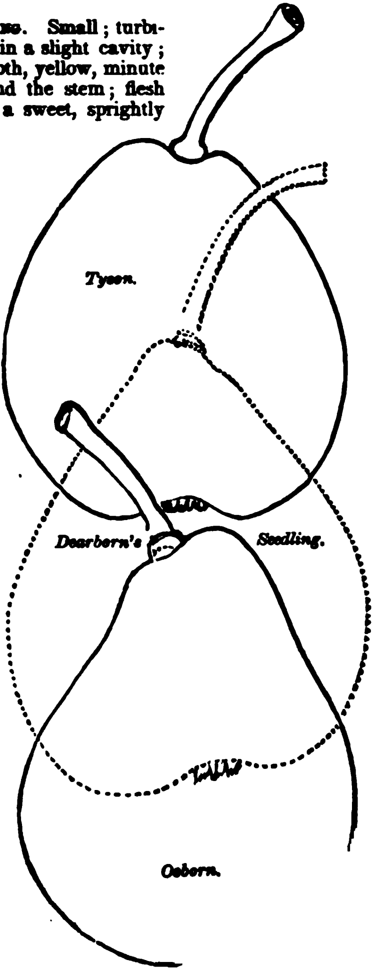
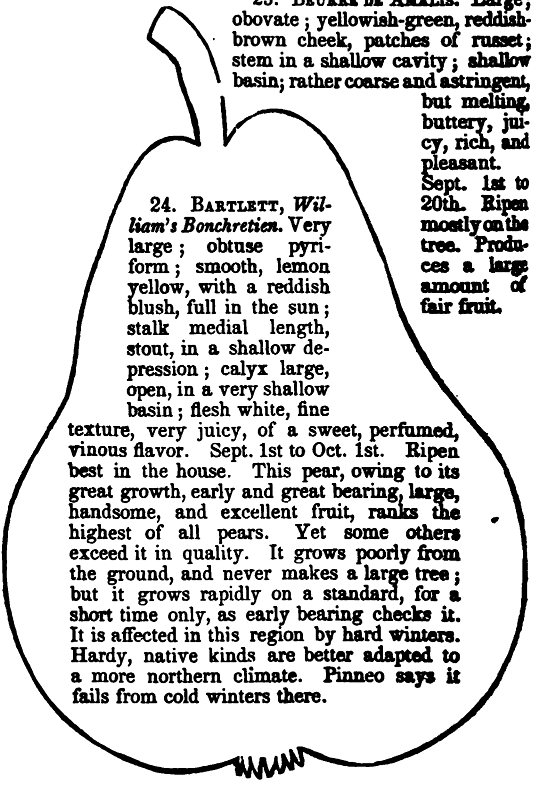


## FALL PEARS.

22. **MUSCADINE.** Medial; roundish-obovate; yellowish green, brown dots; stalk medial, in a small cavity; shallow basin; melting, buttery, of a pleasant, rich, musky flavor. Former part of Sept. Fine quality. Ripen in the house. Origin, near Newburgh, N. Y.



23. **BEURRE DE AMALIS.** Large; obovate; yellowish-green, reddish-brown cheek, patches of russet; stem in a shallow cavity; shallow basin; rather coarse and astringent, but melting, buttery, juicy, rich, and pleasant. Sept. 1st to 20th. Ripen mostly on the tree. Produces a large amount of fair fruit.

24. **BARTLETT,** *William's Bonchretien.* Very large; obtuse pyriform; smooth, lemon yellow, with a reddish blush, full in the sun; stalk medial length, stout, in a shallow depression; calyx large, open, in a very shallow basin; flesh white, fine texture, very juicy, of a sweet, perfumed, vinous flavor. Sept. 1st to Oct. 1st. Ripen best in the house. This pear, owing to its great growth, early and great bearing, large, handsome, and excellent fruit, ranks the highest of all pears. Yet some others exceed it in quality. It grows poorly from the ground, and never makes a large tree; but it grows rapidly on a standard, for a short time only, as early bearing checks it. It is affected in this region by hard winters. Hardy, native kinds are better adapted to a more northern climate. Pinneo says it fails from cold winters there.

25. St. Ghistlain. Medial; pyriform; clear yellow, seldom a red tinge; stem 1¼ inch long, slender, melting, buttery, juicy, of a rich, sprightly, delicious flavor. Sept. Rather variable; when perfect, first-rate. Hardy, vigorous, and productive. Fine for the private garden. Too small for market. Ripen in the house. Foreign.

26. Wilbur. Large medial; oval-obovate; green and russet; melting, juicy, sweet, pleasant; varying from almost first to second rate. Sept. Origin, farm of Mr. D. Wilbur, Somerset, Ms.

27. Pratt. Large medial; obovate; greenish-yellow, many dots, and russet patches; stem slender, in a rather shallow cavity; broad shallow basin; flesh white, fine, melting, tender, very juicy, of a delicious saccharine flavor. Among the best. Middle of Sept. A new variety, originated in Johnson, R. I.

28. Golden Beurre of Bilboa. Large; obovate; bright yellow, brown dots, a little russet; stalk long, slim, in moderate cavity; slight basin; flesh white, fine, melting, buttery, of a rich vinous flavor. Excellent, but not so profitable for the market as the Bartlett. Does best on the quince. Sept. A good bearer. Origin, Spain.

29. Knight's Seedling. Rather large; obovate; yellowish pale green; grayish specks; stem medial; broad, shallow basin; melting, juicy, sweet, rich, aromatic. Sept. Mr. Wm. Knight, Cranston, R. I. One of the best.

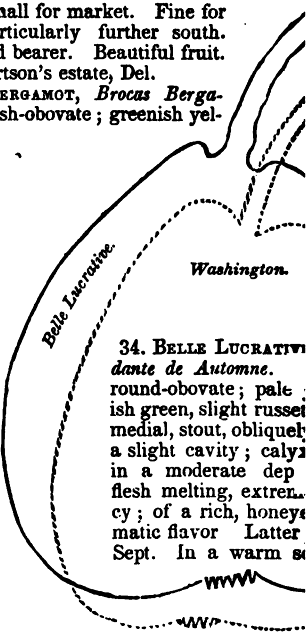
30. Brandywine. Medial; short-pyriform; yellowish-green; dots, and patches of russet; melting, of a sweet, rich, excellent flavor. 10 to last of Sept. Very thrifty and productive. Origin, Chaddsford, Pa.

31. Stevens's Genesee. Large; roundish-obovate; yellow; stalk short, stout, in a slight cavity; calyx short, in a rather shallow basin; flesh white, tender, rather buttery, of a rich, excellent aromatic flavor. 15th Sept. to Oct. A monstrous grower, and good bearer. One of the most valuable in the Middle and Western States, but little cultivated in N. England, and it seems inclined to blast a little here. Tree liable to blight anywhere. Origin, farm of M. F. Stevens, Lima, N. Y.

32. Washington. Small medial; oval-obovate; bright yellow, ruddy cheek, and red spots; stem medial, slender, slight cavity; shallow basin; flesh white, fine, melting, sweet, delicious, and perfumed; uniformly good. Sept. 10

to Oct. Rather small for market. Fine for the amateur, particularly further south. Small grower, good bearer. Beautiful fruit. Origin, Gen. Robertson's estate, Del.

33. Gansel's Bergamot, *Brocas Bergamot*. Large; flattish-obovate; greenish yellow; spots of russet and dark green, a tinge of red, full in the sun; stalk short, thick, in a moderate cavity; broad deep basin; rather coarse, melting, juicy, of a rich, sweet, aromatic flavor. Latter part of Sept. Excellent in warm rich soils, but rather hard to raise, as it is a slow grower and moderate bearer. Adapted to the private garden. Origin, England. Requires double-working on the quince.



34. Belle Lucrativ [illegible] *dante de Automne.* [illegible] round-obovate; pale [illegible] ish green, slight russet [illegible] medial, stout, obliquel [illegible] a slight cavity; caly [illegible] in a moderate dep [illegible] flesh melting, extre [illegible] cy; of a rich, honey [illegible] matic flavor Latter [illegible] Sept. In a warm s [illegible] favorable season, it has no superior, but it varies. [illegible] and good bearer. Does not blight nor crack. Po [illegible] moist soil. Not well tested in orchard culture. Fore [illegible]

35. Frederic de Wurtemberg. Large; pyrifo [illegible] yellow, crimson cheek; stalk an inch long, stou [illegible] large, open, in a shallow basin; flesh white, melting juicy, sweet, and pleasant. Pretty good for market. [illegible] ter part of Sept. A good bearer. Rather variabl [illegible] often worthless. Foreign.

36. Trescott. Medial; roundish-obovate; o [illegible] low: ci [illegible] on blotches; fine-grained, melting, ju [illegible] ple [illegible] ne flavor. 15 to last of Sept. [illegible] [illegible] t, Cranston, R. I. — *Eaton, in Hortic* [illegible]

37. **ABBOTT.** Medial; oblong-obovate; green, scarlet cheek; melting, of a sprightly saccharine flavor. 15 to last of Sept. Raised from seed by Mrs. Thomas Abbott, Providence, R. I. — *Eaton, in Horticulturist.*

38. **LEECH'S KINGSESSING.** Rather large; obovate; sea-green, patches of dark green; flesh rich, buttery, of delicate flavor. Latter part of Sept. Origin by Isaac Leech, Kingsessing, near Philadelphia.

39. **HARVARD**, *L'Epergne.* Large; long-pyriform; russety yellow, brownish red cheek; stalk stout, obliquely set in a narrow cavity; narrow basin; flesh white, melting, juicy, of excellent flavor, but liable to rot at the core, if not picked early. Sept. 10 to Oct. 5. Almost first-rate, and a valuable market fruit, being a great grower, forming a large tree, and producing enormous crops. (Pages 28, 141.) But it comes in when pears and peaches are abundant, and it requires 15 or 16 years to come into bearing.

40. **LONG GREEN**, *Mouth Water, Verte Longue.* Rather large; long-pyriform; green, many dots and specks; stem an inch long, set obliquely; scarcely a basin; flesh white, tender, very juicy, of a sweet, excellent flavor. 10 Sept. into Oct. A slow grower, but very productive, hardy, and one of the best old varieties, and but few new ones excel it. Succeeds well on the quince.

41. **CUSHING**, *Hanners.* Rather large; obovate; greenish-yellow, red in the sun; stalk medial, shallow basin; flesh white, fine, melting, buttery, hardly first rate. Sept. 10 to Oct. 10. Very hardy, slow grower, great bearer. Origin, Hingham. Hanners (origin, Boston) probably the same.

42. **ANANAS.** Medial; roundish-obovate; yellow, tinge of red; melting, delicious. Excellent. From Sept. 1 into Oct. So says Barry. Does well on the quince. Foreign.

43. **HENRY 4TH.** Small medial; roundish, flattened at the eye; greenish yellow; rather coarse, melting, juicy, of a rich, perfumed flavor. Sept. 10th to Oct. Good bearer. Too small for market. Foreign.

44. **CAPSHEAF.** Medial; roundish-obovate; yellow, cinnamon russet; melting, juicy, rather puckery. Sept. and into Oct. A good grower, and great bearer. Origin, R. I.

45. **DUNMORE.** Large; long-obovate; greenish, dots and specks of red russet; flesh whitish, very melting, buttery, of a rich pleasant flavor. Sept. 10 and into Oct. Good grower, great bearer. Fruit varying from almost first-rate to insipid

46. Flemish Beauty. (*See frontispiece.*) Large; obovate; roughish, pale yellow, with marbling of light russet, brownish in the sun; stalk 1¼ inches long, in a narrow cavity; calyx open, in a small basin; flesh yellowish-white, little coarse, melting, juicy, with a rich saccharine, musky flavor. Sept. into Oct. Gather rather early and ripen in the house; sometimes good nearly ripened on the tree. In an open situation and warm soil, it comes up to a high state, and ranks among the best. Great grower, and bearer.

47. Edwards's Elizabeth. Medial; pyriform; lemon-yellow; buttery, of a fine vinous flavor. Sept. 15th, and into Oct. Gov. Edwards, of Ct., raised several seedlings, and this is one of the best.

48. Hull. Medial; obovate; yellowish-green, much russet, rather coarse, melting, juicy, sweet, pleasant. Sept. 15 and into Oct. Origin, Swansey. A different fruit has recently been shown as the Hull. Yellow, with a red cheek.

49. Rousselet de Rheims. Small; obovate; yellowish-green, brownish-red and russet specks in the sun; stalk rather long, set without any depression; full at the calyx; flesh breaking, sweet, rich and aromatic. Latter part of Sept. Foreign.

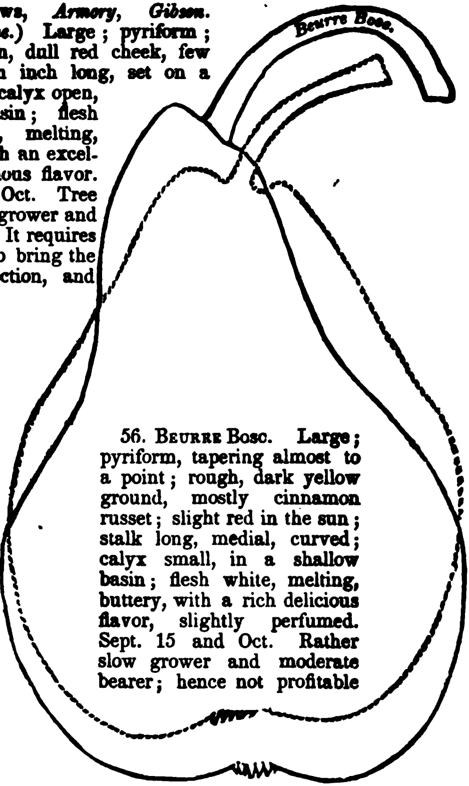
50. Paradise de Automne. Large; pyriform; dull yellow, much bright russet; stem 1½ inches long; shallow basin; rather coarse, melting, of a rich, sprightly, perfumed, delicious flavor. Last of Sept. and Oct. New and promising, excellent in growth, production and quality. Foreign.

51. Belle et Bonne. Large, roundish; pale yellow; coarse, tender, sweet, pleasant. Second-rate. Last of Sept. A great bearer, and pretty good for market. Foreign.

52. Williams's Early. Small medial; obovate; yellow; crimson cheek; melting, juicy, rich, sugary, and excellent. Last of Sept. and into Oct. Good grower, great bearer. By Mr. A. D. Williams, Roxbury, Ms.

53. Eyewood. Rather small; flat; yellowish-green, specks of greenish russet; tender, juicy, of a rich acid flavor. Varies from excellent to poor. Latter part of Sept. and into Oct. Vigorous and productive. Foreign.

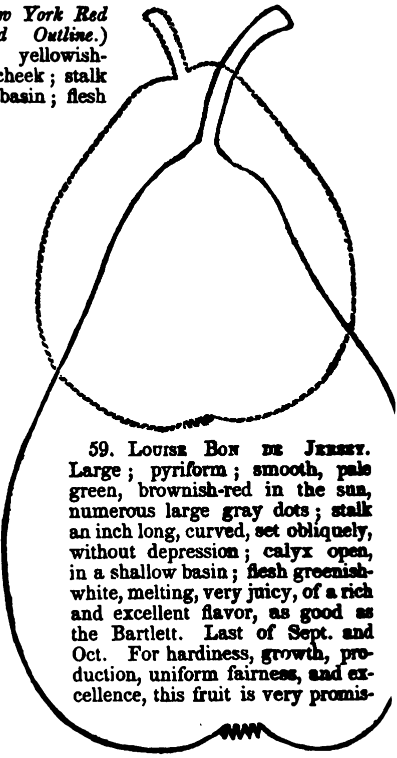
54. Adams. Small; roundish-obovate; deep yellow, russet patches; rather coarse, melting, tender, juicy, of a pleasant aromatic flavor. Latter part of Sept. to 15 Oct. A good grower, great bearer. Nearly first-rate. Origin, Quincy.



55. **Andrews**, *Armory*, *Gibson*. (*Dotted Outline.*) Large; pyriform; yellowish-green, dull red cheek, few dots; stem an inch long, set on a crumpled end, calyx open, in a deep basin; flesh greenish-white, melting, very juicy, with an excellent spicy, vinous flavor. 15 Sept. to 15 Oct. Tree hardy, a good grower and great bearer. It requires high culture to bring the fruit to perfection, and then it is almost first-rate, but variable. Ripen pretty well on the tree. Native of this vicinity. Ives says that on his (sandy loam) soil, it is among the best of native pears. Pinneo says that in that (northern) region, it does not ripen well.

56. Beurre Bosc. Large; pyriform, tapering almost to a point; rough, dark yellow ground, mostly cinnamon russet; slight red in the sun; stalk long, medial, curved; calyx small, in a shallow basin; flesh white, melting, buttery, with a rich delicious flavor, slightly perfumed. Sept. 15 and Oct. Rather slow grower and moderate bearer; hence not profitable for market. Fruit uniformly good, and of the highest character. Should be double-worked on the quince. Foreign.

57. Chelmsford. Large; pyriform; deep yellow, bright red cheek; flesh white, crisp, saccharine. Second-rate. Good for stewing. Good grower, great bearer. 1st of Oct. Native



58. **Seckel**, *New York Red Cheek*. (*Dotted Outline.*) Small; obovate; yellowish-brown, russet red cheek; stalk short, in a slight basin; flesh whitish, melting, buttery, very juicy, of a sweet, rich, spicy, luscious flavor. Generally considered the very best. Some prefer a more vinous flavor. Last of Sept. and Oct. Hardy, slow grower, great bearer. Needs high culture. Does not grow well on the quince. Ernst has raised fine specimens on the mountain ash, and the largest he ever saw were from a tree on a thorn root. It does better on the apple than other kinds. The fruit is larger, but poorer.

59. **Louise Bon de Jersey.** Large; pyriform; smooth, pale green, brownish-red in the sun, numerous large gray dots; stalk an inch long, curved, set obliquely, without depression; calyx open, in a shallow basin; flesh greenish-white, melting, very juicy, of a rich and excellent flavor, as good as the Bartlett. Last of Sept. and Oct. For hardiness, growth, production, uniform fairness, and excellence, this fruit is very promising. Does well on the quince. Foreign.

60. **Heathcot.** Medial; obovate; lemon-yellow, a little russet, slight brown in the sun; stem stout, obliquely set in a small cavity; narrow, shallow basin; melting, buttery, juicy, of a sprightly vinous flavor. Last of Sept. and Oct. Hardy, thrifty, moderate bearer. Gov. Gore's garden, Waltham, Ms.

61. **Jalousie.** Rather large; short pyriform; deep russet, ruddy in the sun; sweet and pleasant. Second-rate. Oct. 1st. Great bearer, fruit very fair. Good for market.

62. **Watertown.** Rather large; roundish-ovate; pale-yellow, patches of russet, slight blush in the sun; stem short, stout; flesh very tender, melting, juicy, sub-acid, luscious. Last of Sept. and Oct. Though not first-rate, it may be valuable, as it is hardy, vigorous, productive. Watertown, Ms.

63. **Bon Cretien Fondante.** Rather large; roundish-oblong; pale green; very juicy, melting, rich, delicious flavor. Almost first to second-rate. Oct. Foreign.

64. **Capiumont.** Large medial; rather long-turbinate; clear yellow, cinnamon specks; flesh fine, melting, buttery, sweet, pleasant. Oct. A good grower, great bearer in all seasons and soils; apt to crack, rot, and be astringent.

65. **Surpass Virgalieu or Virgalouse.** Rather large; obovate; lemon-yellow, pale blush full in the sun; flesh yellowish-white, fine, melting, juicy, of a rich, sugary, delicious, aromatic flavor. Oct. Vigorous and good bearer. Equal to old St. Michael or White Doyenne. Origin traced to Parmenter's nursery, Brooklyn, N. Y.

66. **King Edward.** Large; pyriform; yellow; melting, buttery. Oct. Often poor and puckery.

67. **Beurre Van Marum.** Large; pyriform; yellow, seldom a red tinge; melting, juicy. sweet, and pleasant. Oct. Popular in some parts of the West. Foreign.

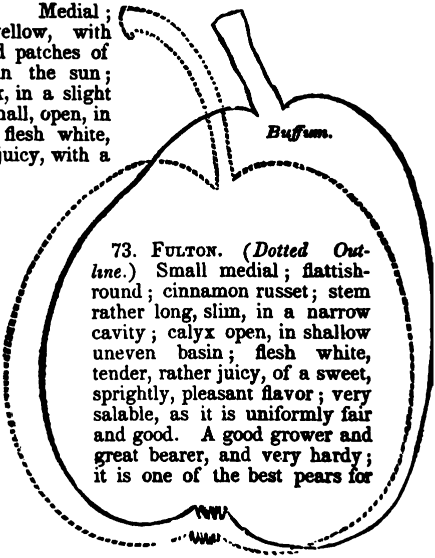
68. **Brown Beurre.** Large; long-obovate; yellowish-green, russet, and reddish-brown in the sun; melting, buttery, very juicy, with a high sub-acid vinous flavor, admired by a few men, and disliked by most women and children. Oct. Very uncertain, especially in the North. Liable to crack. Best on the quince, and trained in a warm location. Bad grower, poor bearer. Foreign.

69. **Bezi de Montigny.** Medial; obovate; yellowish-green; melting, juicy, of a sweet musky flavor. Oct. Resembles Unbaniste, and almost as good. Foreign.

70. **Compte de Lamy.** Small; roundish-obovate; yellow, red cheek; fine, melting, buttery, sweet, delicious. Oct. Better on the quince.

71. **Oliver's Russet.** Rather small; nearly obovate; yellow, mostly cinnamon russet; melting, juicy, of a rich, sweet aromatic flavor. Oct. Vigorous and productive. Rather small for market. By Mr. J. P. Oliver, Lynn, Ms.

72. Buffum. Medial; long-obovate; yellow, with thick specks and patches of red and russet in the sun; stem short, thick, in a slight cavity; calyx small, open, in a small basin; flesh white, melting, tender, juicy, with a fine spicy flavor. Varying from almost first to second-rate; generally good. A good, upright grower and great bearer, and one of the most valuable and salable orchard pears. Raised by David Buffum, Newport, R. I., from a seed of St. Michael, which it resembles.

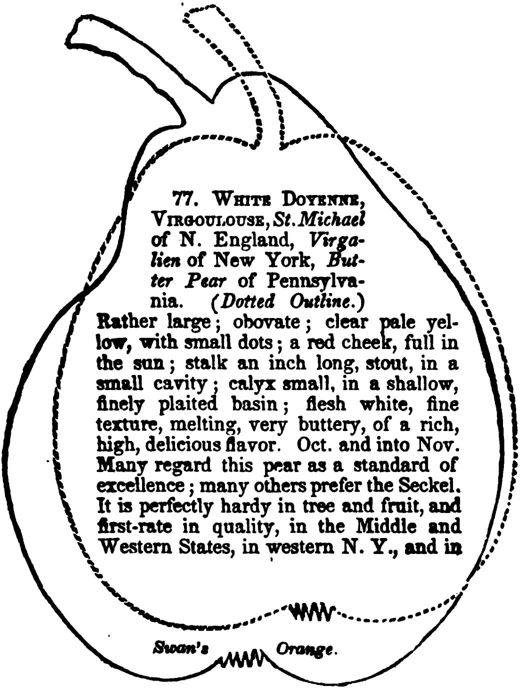


73. Fulton. (*Dotted Outline.*) Small medial; flattish-round; cinnamon russet; stem rather long, slim, in a narrow cavity; calyx open, in shallow uneven basin; flesh white, tender, rather juicy, of a sweet, sprightly, pleasant flavor; very salable, as it is uniformly fair and good. A good grower and great bearer, and very hardy; it is one of the best pears for orchard culture in the North. Oct. and into Nov. Ripen in the house. Origin, farm of Mrs. Fulton, Topsham, Me.

74. Maria Louise. Rather large; long-pyriform, one-sided; yellow, much light russet in the sun; stalk 1¼ inches long, set obliquely with little or no cavity; calyx small, in a narrow plaited basin; flesh white, melting, very buttery, with a rich saccharine and vinous flavor. Oct. and into Nov. It varies from first-rate to poor. Apt to crack in N. England, and is very uncertain. It succeeds well in the Middle States, and in the West. A bad grower from the ground. Good bearer. Louisa Bon de Jenny is preferred. Foreign.

75. Petre. Large medial; obovate; pale yellow, some greenish russet; fine, melting, buttery, of a high perfumed flavor. Oct. and Nov. Slow grower, good bearer. Origin, Pl hia.

76. **Swan's Orange**, *Onondaga*. Very large; long-obovate; smooth, golden yellow, russet specks, tinged with light red in the sun; stem an inch long, stout, curved, set obliquely in a slight cavity; calyx small, close, in a small basin; flesh white, fine, melting, very juicy, rich sub-acid, aromatic flavor, but hardly first quality; or varying from nearly first to second-rate. Oct. and into Nov. Tree hardy, vigorous, and a great bearer. As it combines many excellences, it is regarded as one of the best. Origin, farm of Mr. Curtis, Farmington, Ct., whence a graft was carried to Onondaga, N. Y.; there propagated, and lately disseminated.

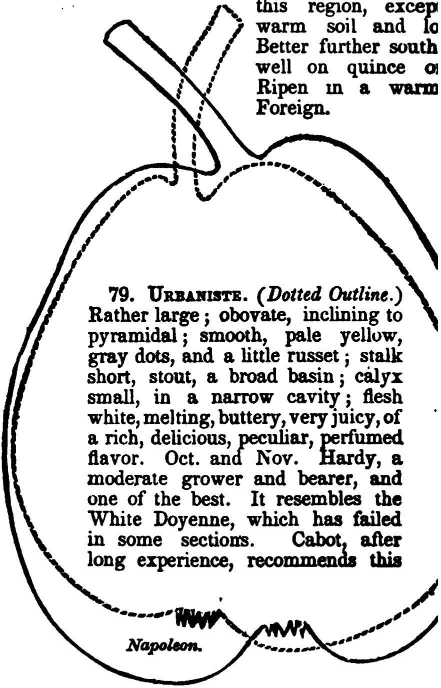


*Swan's Orange.*

77. **White Doyenne**, **Virgoulouse**, *St. Michael* of N. England, *Virgalien* of New York, *Butter Pear* of Pennsylvania. (*Dotted Outline.*) Rather large; obovate; clear pale yellow, with small dots; a red cheek, full in the sun; stalk an inch long, stout, in a small cavity; calyx small, in a shallow, finely plaited basin; flesh white, fine texture, melting, very buttery, of a rich, high, delicious flavor. Oct. and into Nov. Many regard this pear as a standard of excellence; many others prefer the Seckel. It is perfectly hardy in tree and fruit, and first-rate in quality, in the Middle and Western States, in western N. Y., and in

the region of Baltimore; but it generally blasts an
in N. England, on the sea-coast, yet it still flourish
interior. Where uncertain, it does better on the q

78. **Napoleon.** Rather large; obtuse-pyriform,
pale-yellow, deeper in the sun, sometimes a red tin
rather short, rather stout, in a slight depression;
moderate depth; flesh whitish, coarse, melting, ex
juicy, of a sprightly, slight acid, delicious flavor. (
Nov. Sometimes excellent, but rather late and unce
this region, excep
warm soil and lo
Better further south
well on quince o
Ripen in a warm
Foreign.



*Napoleon.*

79. **Urbaniste.** (*Dotted Outline.*) Rather large; obovate, inclining to pyramidal; smooth, pale yellow, gray dots, and a little russet; stalk short, stout, a broad basin; calyx small, in a narrow cavity; flesh white, melting, buttery, very juicy, of a rich, delicious, peculiar, perfumed flavor. Oct. and Nov. Hardy, a moderate grower and bearer, and one of the best. It resembles the White Doyenne, which has failed in some sections. Cabot, after long experience, recommends this as one of the surest and best for general culture. I

coming into bearing on the pear stock. Flourishes double-worked on the quince. Foreign.

80. Beurre de Anjou. Large medial; obovate greenish-yellow, a little russet; flesh whitish, fine, buttery, with a rich, sprightly, vinous, sub-acid flavor. Oct. and Nov. New, fine, and promising. Vigorous and productive. Foreign.

81. Hancon's Incomparable. Large medial: roundish; obovate; yellowish-green, with pale brown and russet spots and patches; melting, buttery, of a pleasant vinous flavor. Oct., Nov. Foreign.

82. Van Mons Leon le Clerc. Large: oblong-obovate; pale greenish-yellow, mingled with brown, slight russet near the stalk; stem rather long and stout; set obliquely, with a slight cavity; calyx small, in a shallow basin: flesh yellowish-white, melting, buttery, with a rich sweet flavor. Varying from nearly first-rate to second-rate. Oct. and Nov. Very liable to canker in wood and blast in fruit. It has been rated too high. Moderate grower and great bearer. Does best on the quince. Foreign.

83. Calhoun. Medial; obovate; pale yellow, pale red in the sun; melting, juicy, of a rich vinous flavor. Last of Oct. By Gov. Edwards.

84. Bishop's Thumb. Rather large; long, narrow, tapering much; yellowish-green; melting, juicy, of a pleasant flavor. Last of Oct. Hardly first-rate. Foreign.

85. Queen of the Low Countries. Large; pyriform; yellow, beautiful red in the sun; stalk long, curved, no depression; flesh melting, juicy, pleasant vinous. Not first-rate. Last of Oct. Foreign.

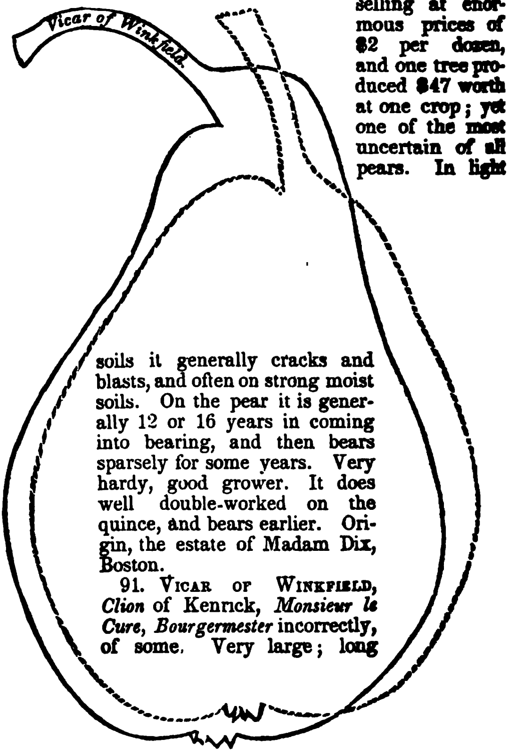
86. Thompson. Medial; obovate; lemon-yellow, little russet; melting, buttery, of a rich, sugary flavor. Last of Oct. and Nov. Foreign.

87. Gray Doyenne, *Doyenne Gris*, *Doyenne Boussouck*. Resembles White Doyenne; more round; much cinnamon russet; little later and better. Rich cinnamon flavor. Latter part of Oct. and Nov. Esteemed in New York. It blasts in the east; also in northern O.

88. Bleecker's Meadow. Small medial; roundish; yellow, crimson in the sun; flesh firm, with a high musky fragrance and spicy flavor. Excellent for cooking, some like its flavor for eating. Nov. A great grower and good bearer. Origin, Pa.

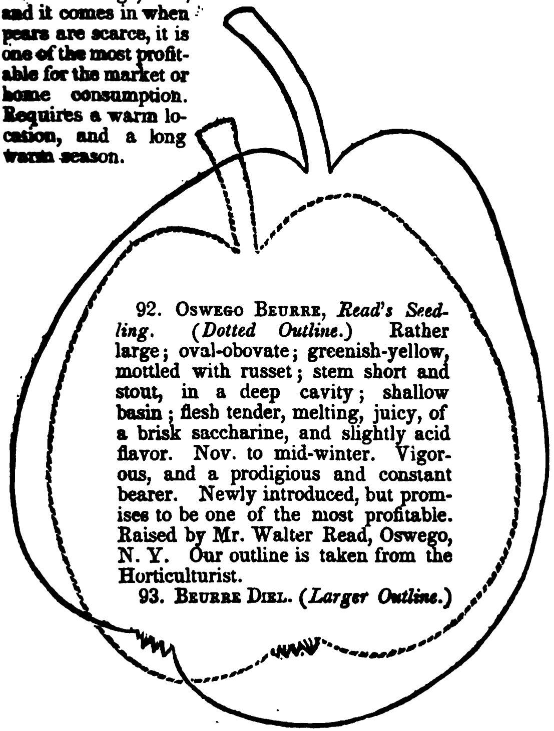
89. Figue. Large medial; pyriform; greenish, russet patches, dull red in the sun; rather coarse, melting, rich, sweet brisk flavor. Nov. Foreign.

90. Dix. (*Dotted Outline.*) Large; pyriform; golden yellow, with dots and patches of russet, and a red tinge in the sun; stem medial length, thick at each end, set obliquely in a slight depression; calyx small, in a slight basin; flesh a little coarse, melting, juicy, of a rich, sugary, Champagne flavor, with a fine aroma. Last of Oct. and into Dec. One of the most splendid and excellent of all pears, when perfect, selling at enormous prices of $2 per dozen, and one tree produced $47 worth at one crop; yet one of the most uncertain of all pears. In light soils it generally cracks and blasts, and often on strong moist soils. On the pear it is generally 12 or 16 years in coming into bearing, and then bears sparsely for some years. Very hardy, good grower. It does well double-worked on the quince, and bears earlier. Origin, the estate of Madam Dix, Boston.



91. Vicar of Winkfield, *Clion* of Kenrick, *Monsieur le Cure*, *Bourgermester* incorrectly, of some. Very large; long

pyriform; pale yellow brown, full in the sun; stem 1½ inches long, slender, obliquely set without cavity; slight basin; flesh greenish-white, coarse, juicy, sometimes of a pleasant lively flavor. Excellent for cooking; for the dessert, varying from pretty good to second-rate. Nov. to Jan. Ripen in close boxes, in a warm room. Does well on the quince. As it is hardy, a great grower, and enormous bearer, the fruit large, fair, and it comes in when pears are scarce, it is one of the most profitable for the market or home consumption. Requires a warm location, and a long warm season.



92. Oswego Beurre, *Read's Seedling.* (*Dotted Outline.*) Rather large; oval-obovate; greenish-yellow, mottled with russet; stem short and stout, in a deep cavity; shallow basin; flesh tender, melting, juicy, of a brisk saccharine, and slightly acid flavor. Nov. to mid-winter. Vigorous, and a prodigious and constant bearer. Newly introduced, but promises to be one of the most profitable. Raised by Mr. Walter Read, Oswego, N. Y. Our outline is taken from the Horticulturist.

93. Beurre Diel. (*Larger Outline.*)

Large; obtuse-pyriform to obovate; lemon or orange-yellow, marbled with russet, large brown dots; stem rather long, stout, in an uneven cavity; flesh whitish, rather coarse, half melting, rich, sugary, and delicious. When perfect is first-rate, but often insipid or astringent, being difficult to ripen. Rather apt to crack. It requires a warm location, high culture and warm season in the North. More certain in the Middle States and in the West. Best on quince. Foreign.

94. DUCHESS DE ANGOULEME. Extremely large; long-obovate, uneven knotty surface; dull greenish-yellow, much spotted and spangled with russet; stalk 1 to 2 inches, stout, in a deep cavity; calyx in a knotty basin; flesh white, buttery, juicy, of a rich, excellent flavor. Nov. and Dec. On the quince, in a warm soil and location, it is of splendid size and nearly first-rate quality, but under adverse circumstances, poor and insipid. Not good for a standard, nor fit for orchard culture. Does better further South. Foreign.

95. FORELLE, *Trout Pear.* Medial; long-obovate; lemon-yellow, deep red, and crimson specks in the sun; fine, melting, of a rich, slightly vinous flavor. Nov. till Jan. Not suited to the North. Tree blights in O. Foreign.

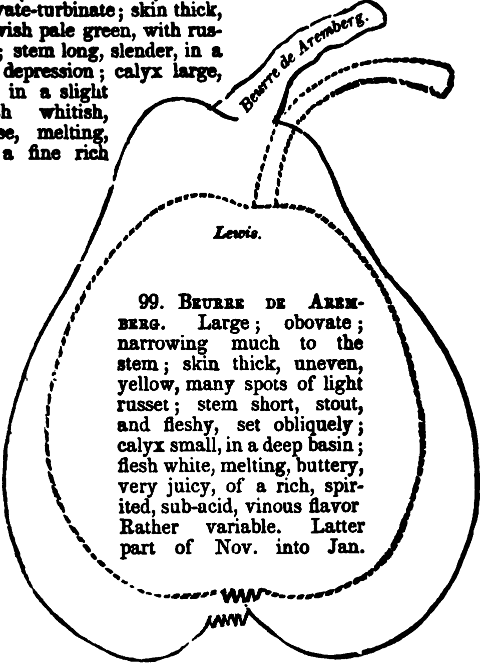
### WINTER PEARS.

96. M'LAUGHLIN. Medial; obovate; rough, brownish-yellow, red in the sun; stem three-quarters of an inch long; shallow basin; flesh a little coarse at the core, melting, juicy, of a rich pleasant flavor, varying from almost first to second-rate. Latter part of Nov. to Jan. Very hardy in tree and fruit. Poor grower from the ground. Grows and bears well on a standard, and the fruit is very fair. Origin, Me.

97. ST. GERMAIN. Large; pyriform; yellowish-green, tinged with brown; a little gritty, melting, sweet, pleasant flavor. Latter part of Nov. to Jan. In the North it is poor, unless sheltered in towns or cities. It is also poor in old settled places. In new lands and mild climates it is valuable. Foreign.

98. PRINCE'S ST. GERMAIN. Medial; oval-obovate; green, mostly covered with brownish russet, reddish in the sun; stem 1¼ inches long, in a slight cavity; calyx large, open, in a slight basin; melting, juicy, a blending of sweetish and rather vinous flavor. Last Nov. to Jan. Great bearer, and fruit ripens well. Origin, Flushing, N. Y.

98. **Lewis.** (*Dotted Outline.*) Small medial; obovate-turbinate; skin thick, rough, yellowish pale green, with russetty specks; stem long, slender, in a slight or no depression; calyx large, spread open in a slight basin; flesh whitish, rather coarse, melting, juicy, with a fine rich flavor. Varies with soil and season, from very good to insipid. Very hardy, good grower, and great bearer. Needs rich, moist soil, and high culture. Latter part of Nov. to Jan. Adapted to orchard culture. Origin, Roxbury.



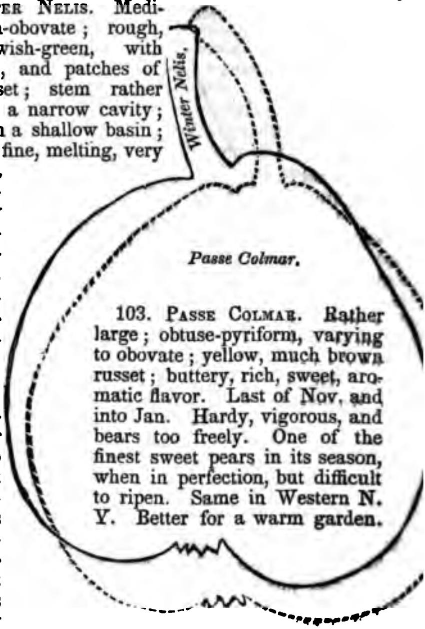
99. **Beurre de Aremberg.** Large; obovate; narrowing much to the stem; skin thick, uneven, yellow, many spots of light russet; stem short, stout, and fleshy, set obliquely; calyx small, in a deep basin; flesh white, melting, buttery, very juicy, of a rich, spirited, sub-acid, vinous flavor Rather variable. Latter part of Nov. into Jan. Keep in close boxes. Hardy and productive. It fails in the light soils of Salem. Those who prefer a smart Champagne flavor, call this the best winter pear. Good on the quince or pear. Foreign.

100. **Cross.** Medial; roundish; bright-yellow, red cheeks; melting, juicy, of a sweet, rich flavor, perfumed. Latter part of Nov. to Jan. Good bearer. By Mr. Cross, Newburyport. *Hovey.*

101. **Columbia.** Large; roundish-obovate; very smooth,

fair, golden-yellow, orange tinge, full in the sun, gray dots; stem rather long, slender, set obliquely in a narrow cavity; calyx medial, in a slight basin; flesh white, little coarse, melting, juicy, of a rich aromatic flavor. Latter part of Nov. to Jan. Vigorous, very productive, the fruit very handsome, and promising for the Middle Region of our country, but in N. England we find that it wants character, the same in Western N. Y. Origin, Westchester Co., near N. Y. city.

102. WINTER NELIS. Medial; roundish-obovate; rough, grayish-yellowish-green, with darker green, and patches of brownish-russet; stem rather long, slim, in a narrow cavity; calyx open, in a shallow basin; flesh whitish, fine, melting, very juicy, of a rich saccharine, highly luscious flavor, and musky perfume. Dec. and Jan. Hardy, good grower and productive; and fruit uniformly good. The best winter pear for those who prefer a sweet luscious flavor. It has been flourishing everywhere, but Cabot says that recently it blasts in some locations. Good on the quince. Foreign.



*Winter Nelis.*

*Passe Colmar.*

103. PASSE COLMAR. Rather large; obtuse-pyriform, varying to obovate; yellow, much brown russet; buttery, rich, sweet, aromatic flavor. Last of Nov. and into Jan. Hardy, vigorous, and bears too freely. One of the finest sweet pears in its season, when in perfection, but difficult to ripen. Same in Western N. Y. Better for a warm garden.

104. CHAUMONTEL. Large; long-obovate; rough, yellowish, russet and red in the sun; melting, buttery, sugary, pleasant perfume. Last of Nov. into Feb. Better on the quince. Hard to ripen. Foreign.

105. **Lawrence.** Tolerably large; obovate, tapering to a blunt end; lemon-yellow, patches of greenish-brown, russet around the stem and eye; stem medial, stout, in a large cavity; calyx large, open, in a large, furrowed basin; flesh yellowish-white, melting, juicy, of a rich, sugary, excellent flavor. Nov. into Feb. New, promises to be a good standard variety; but probably better adapted to the Middle Region than to the North. Moderate growth, fruit hardy. Origin, Flushing, N. Y.

106. **Glout Morceau.** Rather large; oval-obovate; greenish-yellow, brownish patches; stem rather long and slender, in a small cavity; calyx open, in rather deep basin; flesh white, fine, melting, buttery, of a rich saccharine flavor. Dec. and Jan. Cracks in light soils. Pond, who succeeds with almost every kind, says very poor bearer. For the amateur rather than for the orchard. Foreign.

107. **Echassery,** *Ambrette* improperly. Small medial; roundish-obovate; yellow; stalk rather long, in a narrow cavity; calyx open, almost level; melting, buttery, sweet and pleasant. Winter. Uniformly good, and remarkably hardy and productive. Foreign.

108. **Knight's Monarch.** Large; obovate; yellowish-brown, red in the sun, gray dots; stem short; shallow basin; melting, buttery, of a rich, brisk, delicious, musky flavor. Last of Nov. to Feb. Vigorous and productive. Promising, but not tested here. English.

109. **Easter Beurre.** Rather large; roundish-obovate; dark yellowish-green, specks of russet, brownish full in the sun; stem short, blunt, in an abrupt cavity; calyx small, in a broad, shallow, plaited basin; flesh white, fine, melting, buttery, of a rich, sweet, and excellent flavor, when perfect, but it seldom ripens well, even in sheltered locations. Dec. to May. Much improved on the quince. Foreign.

110. **Beurre de Ranz.** Medial; obtuse-pyriform; dark green, russet specks; stalk medial, in a slight depression; slight basin; melting, juicy, of a rich, excellent flavor. Last of winter and into spring. Ripens not well in the North. Better in the Middle States. Esteemed in the West. Foreign.

111. **Wilhelmine.** Medial; obovate; greenish-yellow, gray specks, red tinge in the sun; stalk rather long, in a slight depression; calyx large, on a level, or slight projection; flesh melting, buttery, juicy, and sugary. Feb. to May. New and not tested. Foreign.

## COOKING PEARS.

Bleecker's Meadow and Vicar of Winkfield, already described, are among the very finest cooking pears, and they are remarkably hardy, vigorous, and productive.

112. **HARRISON FALL.** Large; short pyriform; greenish-yellow; stem an inch long, obliquely set; flesh coarse, sweetish, excellent for cooking. Oct. But little known here. Ives raises fine specimens.

113. **OWEN.** Medial; roundish-oval; dark green. Oct., Nov., Dec. One of the finest cooking pears in its season. Flesh tender, delicious, and finely colored. Hardy, vigorous, and productive. Garden of Mr. John Owen, Cambridge. Doubtless a native of this region, and well adapted to more northern climates.

114. **CATALAC.** Extremely large; turbinate; yellow, dotted with brown, brownish-red in the sun; flesh hard and rough; for cooking only, very good, and a beautiful color when cooked. Nov. to Feb. Foreign.

115. **POUND.** Large; pyriform; yellowish-green, with a dull brown cheek; stem long, stout; slight basin; flesh firm, good for baking, stewing or preserving, excelling the Iron pear. Oct. to May. Very vigorous and productive, but the tree is not very healthy in N. England, and the fruit blasts a little. It does better for the South, and here many cultivators prefer it to the Iron pear.

116. **IRON PEAR,** *Black Pear of Worcester.* Large; long-obovate; skin thick, rough, green, much dark russet; flesh hard, coarse; merely a poor cooking pear, being difficult to cook, and then not excellent. Once popular in market, but of late not very salable. Winter. Great bearer.

117. **UVEDALE'S ST. GERMAIN.** Very large; pyriform; yellowish-green, with a brown cheek; stem medial, obliquely, and rather deeply set; deep basin; flesh hard and astringent. Good for cooking. Winter and early spring. Rather tender for this climate.

118. **WINTER FRANK REAL.** Medial; roundish; yellow, specks of russet brown, brownish cheek. Flesh firm; good for cooking. Winter and into spring. Foreign.

119. **EASTER BERGAMOT.** Large medial; roundish-obovate; pale yellow; flesh white, crisp, juicy, and melting, of a sprightly flavor, and fine for cooking. Foreign.

| Market. | Home use. | Quality. | TABLE OF PEARS,<br>In order of ripening. (Page 11.) | |
|---|---|---|---|---|
| | | | *Summer Pears.* | |
| 2 | 2 | 1½ | Madeleine, . . . . . . . . | July 25 to Aug. 10 |
| 5 | | 2 to 6 | Jargonelle, . . . . . . . . | Aug. 5 “ Aug. 20 |
| | | | Zoar Seedling, . . . . . . | “ “ “ “ “ |
| | | | Osband's Summer, . . . | Aug. 10 “ “ 30 |
| 1 | 3 | 1 to 4 | Bloodgood, . . . . . . . . | “ 12 “ Sept. 5 |
| | | | Muskingum, . . . . . . . | “ 15 “ “ “ |
| | | | Moyamensing, . . . . . . | “ 12 “ “ “ |
| | | 2 to 10 | Julienne, . . . . . . . . | “ 15 “ “ “ |
| | | 5 to 10 | Belle of Brussels, . . . | “ “ “ “ “ |
| 3 | | 5 to 7 | Dorr, . . . . . . . . . . | “ “ “ “ “ |
| | 1 | 1 | Rostiezer, . . . . . . . . | “ 20 “ “ 10 |
| 6 | 5 | 1½ | Wadleigh, . . . . . . . | “ “ “ “ “ |
| | | 2 to 4 | Summer Frank Real, . . | “ “ “ “ “ |
| 4 | 6 | 1½ to 2 | Tyson, . . . . . . . . . | “ “ “ “ “ |
| | 4 | 1½ to 3 | Dearborn's Seedling, . . | “ “ “ “ “ |
| | | | Osborn, . . . . . . . . . | “ “ “ “ “ |
| | | | *Fall Pears.* | |
| | 12 | 1 | St. Ghistlain, . . . . . . | Sept. 1 to Sept. 20 |
| 1 | 2 | 1½ to 3 | Bartlett, . . . . . . . . | “ “ “ “ 25 |
| | | 2 to 6 | Wilbur, . . . . . . . . . | “ “ “ “ “ |
| 12 | | | Pratt, . . . . . . . . . . | “ “ “ “ “ |
| | | 2½ to 4 | Golden Beurre of Bilboa, | “ “ “ “ “ |
| 11 | | | Knight's Seedling, . . . | “ “ “ “ “ |
| 10 | | 1½ to 2 | Stevens's Genesee, . . . | “ 10 “ Oct. |
| | | 1½ to 3 | Washington, . . . . . . | “ “ “ “ |
| | 6 | 1 | Belle Lucrative, . . . . . | Latter part of Sept. |
| | 11 | 1 | Gansel's Bergamot, . . | “ “ “ “ |
| | | 2 to 10 | Frederic de Wurtemberg, | “ “ “ “ |
| | | 2 to 3 | Harvard, . . . . . . . . | Sept. 10 to Oct. 5. |
| | | 2 to 3 | Long Green, . . . . . . . | “ “ “ “ “ |
| | | 2 to 3 | Cushing, . . . . . . . . . . | “ “ “ “ “ |
| 5 | 4 | 1 | Flemish Beauty, . . . . . . . | “ “ “ “ “ |
| | | | Paradise de Automne, . . . | “ “ “ “ “ |
| | | 1 to 5 | Eyewood, . . . . . . . . . . . | “ “ “ “ “ |
| | | 2 to 4 | Adams, . . . . . . . . . . . . . . | Last of Sept. |
| 6 | | 1½ to 3 | Andrews, . . . . . . . . . . . . | “ “ “ |
| | 5 | 1 | Beurre Bosc, . . . . . . . . . . . | “ “ “ |
| | 3 | 1 | Seckel, . . . . . . . . . | Last of Sept., and Oct. |
| 2 | 7 | 1½ | Louise Bon de Jersey, | “ “ “ “ “ |
| | | 1¾ | Heathcot, . . . . . . . | “ “ “ “ “ |

| Market. | Home use. | Quality. | LIST OF PEARS, In order of ripening. (See page 11.) | |
|---|---|---|---|---|
| | | | *Fall Pears.* | |
| | | | Trescott, | Last of Sept. |
| | | | Abbott, | “ “ “ |
| | | 1 to 5 | Brown Beurre, | Oct. 1 |
| | | 5 to 8 | Jalousie, | Oct. 1 |
| | | 1 to 4 | Surpass Virgalieu, | “ “ |
| | | 2 to 4 | Beurre Van Marum, | “ “ |
| 7 | | 2 to 5 | Buffum, | “ “ |
| 9 | | 2 to 4 | Fulton, | Oct. into Nov. |
| | | 1 to 5 | Marie Louise, | “ “ “ |
| | | 1 to 10 | White Doyenne, | “ “ “ |
| 3 | 9 | 1½ to 5 | Swan's Orange, | “ “ “ |
| | | 1 to | Beurre de Anjou, | “ “ “ |
| 8 | 1 | 1 | Urbaniste, | “ “ “ |
| | | 1½ to 6 | Napoleon, | “ “ “ |
| | | 1½ to 9 | Van Mons. Leon le Clerc, | “ “ “ |
| | | | Bishop's Thumb, | Last of Oct. |
| | | 4 to 5 | Queen of the Low Countries, | “ “ “ |
| | | | Gray Doyenne, | “ “ Nov. |
| | | 2 to 8 | Bleecker's Meadow, | “ “ “ |
| | 10 | 1 to 3 | Dix, | Nov. |
| 4 | 8 | 3 to 8 | *Vicar of* Winkfield, | Oct. into Dec. |
| | | 1½ to 5 | Duchess de Angouleme, | Nov. to Jan. |
| | | | Oswego Beurre, | “ “ “ |
| | | 1 to 10 | Beurre Diel, | Nov. to winter. |
| | | | *Winter Pears.* | |
| | | 1½ to 6 | M'Laughlin, | Last Nov. to Jan. |
| 4 | 4 | 1½ to 5 | Lewis, | “ “ “ “ |
| | | | St. Germain, | “ “ “ “ |
| | | 2 to 5 | Cross, | “ “ “ “ |
| 5 | 6 | 1½ to 6 | Columbia, | “ “ “ “ |
| | | | Prince St. Germain, | “ “ “ “ |
| 1 | 2 | 1 to | Beurre de Aremberg, | “ “ “ “ |
| | | 1½ to 10 | Chaumontel, | “ “ “ Feb. |
| 6 | 5 | 1½ to 5 | Lawrence, | “ “ “ “ |
| | | 1 to 6 | Glout Morceau, | Dec. and Jan. |
| 2 | 1 | 1 | Winter Nelis, | “ “ “ |
| 3 | 3 | 1 to 5 | Passe Colmar, | “ “ “ |
| | | 2 | Echassery, | Winter. |
| | | | Knight's Monarch, | Jan. and Feb. |
| | | 1 to 10 | Easter Beurre, | Dec. to May. |
| | | | Beurre de Ranz, | Winter and Spring. |

The *Summer Pears*, Zoar Seedling, Osband's Summer, Muskingum, Moyamensing, and Osborn, are new and promising, but not well tested here, and some of them are but little known anywhere.

The *Fall*, Pratt, Trescot, Abbot, Paradise de Automne, Wilbur, Hull, Swan's Orange, Knight's Seedling, Oswego Beurre, and Lawrence, have not been well tested.

The *Winter*, Columbia, and M'Laughlin, are but little known.

Ernst recommends Madeleine, Julienne, Bartlett, Osborn, Summer Colmar, Washington, Doyenne Gray, Flemish Beauty, Seckel, Duchess de Angouleme, Beurre Diel, Louise Bonne de Jersey.

Kirtland and Elliott recommend the following varieties.

Summer. For the *Garden* — Madeleine, Dearborn's Seedling, Bartlett, Summer Frank Real, Belle of Brussels, Musk Robert, (K.,) Early Doyelone, (E.) For *Market*, Madeleine, Windsor, Bartlett, Belle of Brussels, Summer Beauty, (K.,) Zoar's Seedling, (E.,) Summer Frank Real.

Fall. For the *Garden* — Louise Bon de Jersey, Beurre Bosc, Ananas de Ete, Kirtland's Beurre, Marie Louise, Rousselet of Rheims, (K.,) Honey, (E.,) Seckel, Stevens's Genesee, Gansell's Bergamot, Heathcot, Beurre Diel, White Doyenne, Gray Doyenne, Dix. For *Market*, add Frederic de Wurtenberg, Bezi de La Motte, Napoleon, Coit's Beurre, Beurre Van Marum, Duchess de Angouleme. Many others — such as Belle Lucrative, Andrews, &c., have not been well tested.

Winter. For the *Garden* — Winter Nelis, Beurre de Aremberg, Lewis, Beurre de Ranz, Easter Beurre. For *Market*, add Chaumontel, Uvedale's St. Germain. Columbia, and many others, not fairly tested.

The Pomological Convention, at Buffalo, recommend as first-rate, for general culture, Dearborn's Seedling, Tyson, Rostiezer, Golden Beurre of Bilboa, Bartlett, Louise Bon de Jersey, Beurre de Aremberg, Glout Morceau. Stevens's Genesee, and Andrews, nearly first-rate. Bloodgood fine on light soils.

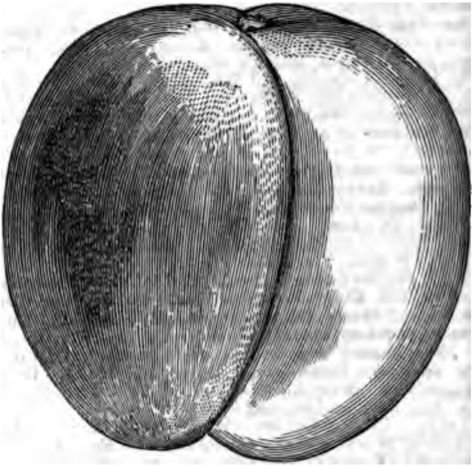
The National Convention of Fruit Growers recommend Madeleine, Dearborn's Seedling, Bloodgood, Tyson, Golden Beurre of Bilboa, Bartlett, Seckel, Flemish Beauty, Beurre Bosc, Winter Nelis. For *Particular Locations*, White Doyenne, Gray Doyenne.

Barry recommends, Summer — Madeleine, Osband's Summer, Bloodgood, Dearborn's Seedling, Summer Franc Real, Belle of Brussels, Bartlett.

Autumn. Seckel, White Doyenne, Gray (or Red) Doyenne, Countess de Lunay, Louise Bon de Jersey, Paquency, Ananas, Beurre Diel, Duchess de Angouleme, Oswego Beurre, Swan's Orange, Beurre Bosc.

Winter. Chaumontel, Winter Nelis, Glout Morceau, Beurre de Aremberg, Vicar of Winkfield (for cooking.)

## THE PEACH, (*Amygdalus persica.*)



The Peach is a native of the warm climate of Persi The tree is small, of a low, spreading form, (page 18 with limber branches, long, narrow, serrated leaves, a pink blossoms, that appear before the leaves. The fru externally, is less distinctly marked than most other specie In many kinds there is a general sameness in size, for and color; and the size, color, and quality, of the same va eties, vary greatly, from culture and other causes. On t same tree, one specimen will be of the greatest excellen another insipid, or unpleasant.

The tree is short-lived, but it is of rapid growth, a bears early. We have seen many fine specimens of fr in perfection 28 months from planting the seed, yet it gene ally bears but little so early. Some kinds bear pretty v the fourth year, from seed, and a full crop the fifth. trees often decay after bearing 2 or 3 good crops; and so times the first good crop is the last.

The peach flourishes finely in the Middle and Western States; it has been extended far south; and north to the states of Vermont, New Hampshire, and Maine, and in the southern parts of these States it is cultivated to some extent. By due care in raising fine, hardy, early varieties from seed, true to their kind, and a judicious selection of soil and location, the culture of this delicious fruit may be extended, in a small way, to the northern part of the U. States, and other regions in the same latitude.

Although we have been in the finest peach regions, we never tasted better fruit than in N. England—even in Maine, and some specimens 10 inches round. We have seen, in this section, as large peaches as we have accounts of in any part of the world, some 12 or 13 inches in circumference, and of the highest quality. We have seen some sold at $3.00 per dozen. Yet the peach is very uncertain in N. England, and somewhat precarious in other parts of the country, being injured in bud and blossom by sudden changes of weather.

In New Jersey, Delaware, and Maryland, are extensive peach orchards, in some cases containing 20,000 trees, and yielding 5, 10, or 15,000 dollars from a single plantation. In all parts of the country, the buds are liable to be killed, which causes a failure, and occasionally a hard winter kills off most of the old trees, which are easily replaced by new ones.

USES. The peach is used mostly for the dessert, and is one of the most luscious of all fruits, being, when perfectly ripened on the tree, and eaten soon, wholesome, refreshing, and nourishing. It is strongly diuretic, and rather laxative. Raw peaches, of a fine quality, with a little sugar, are a great luxury, and a good substitute for butter, meats, &c. Peaches and milk are delicious. They make superior preserves. The finest we ever tasted were made of maple sugar and peaches. Though transient in their fresh state, they are dried and saved long, and transported any desirable distance. In ice, they have been carried, in their fresh state, to distant parts of the world, in fine condition.

SOIL AND LOCATION. The peach will flourish in any friable soil, under good culture, but the best soil is a light and rather dry loam. It succeeds well with good, deep culture, and suitable manure, on light, sandy, and gravelly soils; but in such cases it is necessary to guard against severe drought by manures, inducing moisture, frequent stirring the soil, mulching, or by all these advantages. Any soil suitable for Indian corn is adapted to the peach. The subsoil should be dry and porous. On moist soils, the tree grows late, and will not ripen its wood in season for winter. Too much is expected of the peach on light, thin soils, with bad culture. The trees are transient. Such soils should be subsoiled and manured. All soils not in right condition may be improved. (See page 29.)

Elevated situations are far the best for the peach, especially in the North, where the tree, but more especially the blossom buds, are often killed, not so much, perhaps, by severe cold, as by sudden changes from thawing and freezing, and the reverse. In this way buds are often killed in Dec. and Jan., as may be seen by a black speck in the centre of the bud, indicating its destruction.

In hundreds of cases we have seen peach buds killed in low, (even on light warm lands,) warm locations, whilst on elevations of 60 to 100 feet, they were flourishing under a heavy crop of fruit. On a frosty night, in fall or spring, or in the most severe weather in winter, the thermometer indicates 5 or 6 degrees lower on low lands than on those 60 to 100 feet high. This difference, together with the greater extreme of heat, in warm, sunny days, and consequently the great and sudden changes, often makes all the difference between a good crop and a total failure.

In most cases, the north sides of hills and ridges are preferable for peaches; there is less heat by day, and less frost by night, as the north wind, which prevails in time of frost, prevents its severity. Owing to the situation of some sections of the country, and certain currents of air, this rule is not invariable.

Propagation. The peach is easily propagated by seeds and budding; but with difficulty by grafting, layers, or cuttings. There are some fixed varieties, which, if cultivated at a distance from other trees, so as not to mix in the blossom, will invariably produce the same from seed; they are propagated with less trouble, and the trees are more hardy and durable. With proper attention, a complete assortment of peaches might be obtained in this way. We have several valuable fixed varieties, and are making experiments to obtain others.

The following is a good mode. Plant stones from a superior seedling, standing alone, and if all planted. to the number of 10 or 15, produce precisely the same fruit as the parent, then the variety may be regarded as fixed. If they vary, make an experiment on the best. if superior, removing others near them, and test their offspring in the same way. Some cultivators plant stones of the best varieties, and never bud; they usually get good fruit, and succeed as well in the North as those who bud the finest varieties.

In raising stocks, or seedling kinds, the stones should be grown in the North, for northern culture. and the late kinds make the most hardy stocks. When taken from the meat, spread and dry in the shade, and keep in a cool place; drying will not injure them, but have them spread thin, that they may not mould. Let them remain till late in fall, or midwinter, and then pour on water, and soon drain it off, and put them in moderately moist sand or loam, in a box, or cask, set in the cellar; cover close with a moist mat, cloth, or moss, that the sand may not dry, and wet it a little occasionally, especially if the lot be small. Or as soon as out of the flesh, or before winter, bury in a light soil more than a foot deep.

In either case, when ready to plant in spring, with a light hammer crack the stones, striking a gentle blow on the side edge, take out the meat, and plant as you would corn, and about as deep. This may be done in the evening, or on a stormy day, and the meats may be kept a week in the cellar, spreading thinly to prevent moulding, and covering, when warm and airy, to prevent drying. These directions, which we give from our own experience, contain, in a few words, more useful information on this point, than all the volumes that have been published upon the subject. If the stones be planted in the fall, they may not crack open during winter, and will be lost; and if they are covered up in the earth, near the surface, preparatory to spring planting, they may crack and grow early, before the land is dry enough to plough. But in the way we have named, they are ready early, and yet they may be kept good till June. In the spring we have covered them 18 inches deep, in a light soil in the shade, and kept them good till the next spring.

We have trees from stones that were kept over one summer and they came as well as others of the previous year.

Yet all seeds generally lose something of their vitality by long keeping in any situation.

Plant in a recently ploughed, light, mellow soil, in drills 4 feet apart, and if the seeds are scarce, and appear very good, plant them 1 foot apart; but if they are plenty, plant them a few inches apart, and when too thick, remove the superfluous to thin or vacant places, or to new lots, when 3 to 5 inches high, with a transplanting trowel. Cultivate the land well, and if the trees get a good growth, they will be in order for budding the first year. Some prefer letting them remain till 2 years old. But with a suitable soil and good culture, the peach is large enough for budding the first year, and for transplanting the second; we never want larger trees, for the peach is short-lived, and the sooner it is permanently set the better.

It is better, if convenient, to plant the stones where the trees are to remain. Some transplant next spring after budding, and, if nicely done, it succeeds well. In such cases, the soil should be in fine condition, and the transplanting done early, before the buds start, else they will be checked by the operation. In budding, select buds having three leaves or buds, and next those of two, preferring the buds at, or towards, the centre of the scion.

Planting, Training and Pruning. Many cultivators set peach trees about 21 feet apart, (100 to the acre,) and in spreading wide they may interfere; but in the North, and all regions where it is short-lived, it is better to set half that distance apart, each way, (400 to the acre,) and allow the trees to spread out low, and *shorten-in* at the extremities, making the trees dwarfish.

Dwarfs, made in this manner, are not only adapted to small gardens, but they are more profitable for extensive culture in regions where the peach is of short duration. Allow branches to come out low, for this tree is luxuriant and tender, and is more exposed when trained high. Dwarfs and slow-growers, adapted to northern culture, may be made by budding on plum-stocks; this better fits them for moist soils, and guards against the borer.

For a few years after setting the trees, crops may be taken from the land, till the trees come into bearing, manuring well, and cultivating thoroughly, (having reference to the kind of crop, page 52,) and then devote the whole land to the trees, continuing the manuring and culture. As the peach tree contains much potash, wood ashes are an excellent manure, as we have found by repeated experiments.

In the North, the peach is sometimes trained to walls, fences, and upon buildings, in various ways, as horizontal training, fan training, &c.; but this is mostly fancy work, for the amateur, or gentleman of wealth and leisure. In some cases it may be a matter of real utility, to ripen late kinds, or to produce this delicious fruit in a climate too cold for common training.

Pruning at the trunk should never be practised, excepting to cut away dead and decaying branches; or when too thick, small limbs, while the trees are young. After trees are a few years old, reduce the branches, when too thick, only by cutting them off at the extremities, or some distance from the trunk, as cutting at the trunk causes the gum to ooze out, and endangers the health and life of the tree.

Prune peaches in fall, or early in spring. The fall is preferable, as by the reduction of the top, the tree will be less exposed to injury. Prune at the extremities, by cutting off one third, or, when very luxuriant, one half of the last growth. This mode is called *shortening-in*, or *heading-in*, and it is most conveniently performed with stout shears, having long, wooden handles.

Trees pruned in this way will bear earlier, and produce larger, fairer, and better fruit, and larger crops to the acre, if set near, as we have recommended; and this mode will prevent over-bearing, by reducing the blossom-buds, and save the expense of thinning the fruit. It will also keep up a constant succession of new wood for the next crop, for the fruit is on the previous year's growth.

This is by far the best system of pruning, as it keeps the trees low and close, saving them from destruction by excessive crops, heavy winds, damp snow, sleet, and ice. It also economizes room, by many trees to the acre; it promotes health, vigor and longevity, and a constant production of good fruit.

This system is now becoming general, and highly useful. A tree *shortened-in* is covered with fruit and foliage, like the neat, small figure; while the *unpruned tree* (or that pruned only at the trunk) presents the deformity of naked branches, with the fruit and foliage only at the extremities, like the large, ugly figure, on the next page.

*Shortened-in.*

*Unpruned.*

To induce early bearing, particularly where trees are luxuriant and barren, clip off the extremities of the branches in July, about ⅓ of the new growth; this will produce blossom buds, the latter part of summer, for a crop the next season. We have found this very successful.

WASH. Half a peck of unslacked lime, 2 quarts of soot, 1 quart of soft soap, and 1 pound of sulphur. On this pour warm water, till the whole is of a creamy consistency. Apply it to the trunk and branches with a brush, sponge or cloth, as hot as the hand can bear, in the spring, and again early in summer. Good for health, growth, and to destroy insects.

### DISEASES AND INSECTS.

THE YELLOWS, a disease peculiar to this country only, is the most fatal of all evils to which the peach is subject. So great has been its devastation, in some regions, that the culture of this fruit has been entirely abandoned. The cause of the yellows has not been ascertained, and though some attribute it to poor soil, and bad culture, (which may have aggravated the evil,) yet there are undeniable facts to the contrary; for new and vigorous trees, from healthy districts, and set on the best of soils, and under the most prudent management, have fallen a prey to this formidable malady.

*Indications.* Ripening of the fruit 2, 3, or 4 weeks earlier than usual, some branches being diseased and ripening earlier; while on the same tree others appear healthy; and on the same tree, branches ripening in succession from 1 to 4 weeks earlier than common. Often purplish-red specks on the fruit, and the flesh also colored, and purple next the stone, let its natural color be what it may.

The fruit generally growing to its full size the first season, but much smaller afterwards. The starting of slender, wiry shoots from the body and limbs, not from visible, but latent, buds, with small leaves, pale yellow, and of sickly appearance, which shoots do not ripen their wood, but perish the next winter. The leaves of the whole tree slightly change from deep green to a yellowish cast. The premature ripening of the fruit always attends the yellows, the unnatural shoots generally, but not always.

*General Remarks.* It has not been determined in what ways, in every respect, the disease is propagated. Some suppose that it is propagated by constitutional taint — that is, the seeds of diseased trees will produce sickly descendants, — but it is not invariably produced in this way, for trees from healthy regions have soon become affected with yellows in tainted districts, being in the vicinity of diseased trees. There may be hereditary taint, but other modes of propagation also.

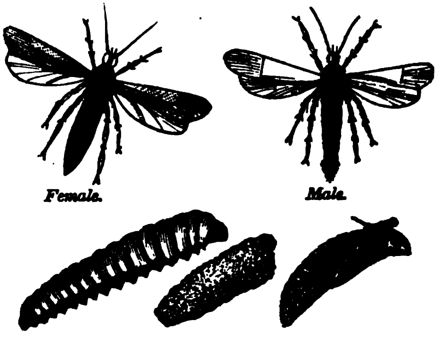
It is a well established fact that the disease is propagated by contagion, as healthy trees, innoculated with buds from diseased trees, soon become affected also. One mode of propagation is, doubtless, by bees carrying the pollen of diseased trees to blossoms of healthy ones; young trees generally escape taking it by contact, (as they do not blossom,) though they may have it constitutionally. Some have undertaken to disprove this by a few experiments in mixing the pollen of diseased with that of healthy trees. Cutting a well tree with a knife just used in pruning a diseased one, will, it is said, impart the disorder.

It has been supposed that the yellows is infectious — that it is propagated in the air, like the small pox, or measles — but we consider this very doubtful. Still it is possible that from trees having so deadly a malady, there may be emanations of poisonous effluvia, that taint the air and communicate the poison to other trees by absorption in the leaves. It is supposed that lands recently occupied by diseased trees will impart the disease to new trees set on m.

Besides the propagation by constitutional taint in seeds, and contagion by innoculation, there are, doubtless, other modes, which may be by contact in the way of bees, and the wind blowing the pollen from tree to tree, or by infection in the atmosphere; else minute insects must be the cause of the disease, and this is the opinion of some nice observers; but they know not what, nor when, where, nor how, they operate.

*Remedies.* None have ever been prescribed; yet in this, as in all other cases of guarding vegetables and animals against diseases, manage well as to getting good, healthy trees, selecting suitable soil and location, giving good and thorough culture, pruning at the extremities of the shoots, not at the trunk, observing good management in every respect. Plant no trees where peach trees have lately grown, whether diseased or not, as the soil has become, at least, measurably exhausted of some essential ingredients. As soon as trees show the least signs of the disease, remove them, root and all, and consume them.

The Peach Tree Borer, (*Ægeria exitiosa,*) in its different stages.



*Female.* *Male.*

*Borer.* *Cocoon.* *Pupa state.*

The perfect insect resembles a wasp. The sexes differ widely. The body of both is mostly steel-blue; the wings of the male are transparent, bordered and mixed with the same blue color. The fore wings of the female are blue and opaque; the hind wings like those of the male. A broad orange belt in the middle of the abdomen. During the summer, the eggs, of a dirty white hue, and scarcely perceptible to the naked eye, are laid on the tree, at or very near the surface of the ground, in little punctures, and covered with greenish slime. In a few days they hatch, and the young, whitish worms eat through the bark, and girdle the tree, passing between the bark and sap wood, eating both. When near a year old, they make their cocoons, usually just below the surface, and soon change to a pupa or chrysalis state, and shortly come forth in the winged state, as represented in the cuts, and lay their eggs. The last change is from June to Oct., mostly in July; hence the various sizes of worms through the season. This insect prevails to a great extent, especially in the old states, and is very destructive, but with close attention it may be destroyed.

Various are the remedies. The surest is to keep clean the surface at the tree, and examine closely and frequently, and cut out the insects. If offensive matters be applied, the tree will soon grow and leave tender places exposed; yet some have succeeded. Strong wood ashes, or slaked lime, half a peck heaped around each tree, has been effectual, and they make good manure when spread late in the fall. Some have saved their trees by laying refuse tobacco around them, as few worms can bear so nauseous a weed, however it may be with beings of a higher order. A compound may be made of hen manure and guano, tobacco, soot, ashes, lime, sulphur, a little salt, soap, or whale oil soap, and other offensive substances, more or less, and laid around the root and heaped up against the trunk, first clearing away the earth; this will both protect the tree and serve as an excellent manure. Or use offensive washes. (Pages 73, 89.) Tenacious substances, like white-wash, form a coat that excludes the air, and are injurious. Some clear away the earth and apply straight straw to the tree, one foot high, spreading out the lower ends, a few inches on the earth, to be covered with soil, binding the straw to the tree with 2 bands. Or bind on pasteboard, or stout paper, birch, leather, or other compact substance; but teguments have an unfavorable effect, binding the tree, and making it tender. In spring, summer, and autumn, remove the earth a few inches, and examine the trees for worms, which are indicated by gum and castings from their holes.

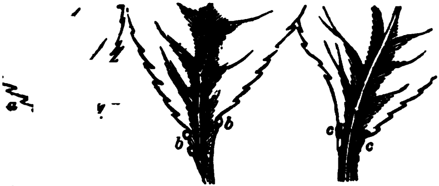
Plant Lice (*aphides*) live under the leaves, and, by their punctures, cause them to become thick, and curl, forming hollows beneath and crispy reddish swellings above, and to fall prematurely. The *Leaf-hoppers* (*Thrips*) are also injurious to the leaves. As a remedy, syringe them with a solution of whale-oil soap, or strong soap-suds, with an infusion of tobacco, or dust the leaves with wood ashes, or powdered lime, when the dew is on. The peach generally soon recovers from the effect of the *curled leaf*. The same remedies may be used as for leaf-hoppers.

OTHER INSECTS. A *small borer* sometimes eats into, and passes along the heart of small tender branches, which is not very common, and they only affect a small branch which is soon renewed. Cut off and burn the affected part. The *curculio*, so destructive to plums, sometimes affects peaches also, but the rough skin of the peach serves as a protection in some measure. When the fruit is ripening, *bees*, *wasps*, *hornets*, *flies*, and a multitude of other insects, often devour the best fruits to a great extent. As a remedy, destroy insects by vessels of sweetened water, (see page 74,) and other means, and as the season of honey will be past, shut up honey bees, giving them air and water. The yellow-fleshed peaches generally have thicker and rougher skins, and are less liable to injury from insects.

MARKS OF DISTINCTION. As there is usually a general resemblance in peaches, as to form, color, flavor, &c., or the variations of all are great, from soil, location, manure, culture, and other causes, they cannot be well distinguished by those characteristics that mark other fruits; therefore, resort is had to other marks of distinction, in the leaves, flowers, and stones.

The first general division is into FREESTONES, (*Melters*,) such as separate freely from the stone, and CLINGSTONES, (*Povies*,) whose meat adheres to the stone. Freestones are usually the most popular in the market. Clingstones will generally keep longer, and they are often used for preserves, being better for this purpose.

THE LEAVES contain their natural distinctions. Some kinds have no glands and the leaves are deeply *serrated*, (cut like a saw,) in the margin, as *a*, *a*. Others have round and regular, or *globose glands*, as *b*, *b*. The other class has oblong and irregular, or *reniform glands*, as *c*, *c*.



*Serrated a[illegible]dless. Globose glands. Reniform glands.*

BLOSSOMS show two nice distinctions. The one, *large* , red in the centre and pale in the margin; the other, *lowers*, tinged with dark in the margin.

IES. As the peach is in use but a short time, has a great diversity of flavor, and is used only for a few s, a few varieties are sufficient, either for the private or the market, and they should be of the highest every respect. Therefore we have treated particu- the management, and have given a sufficiently list of superior kinds, and have passed over many va- generally inferior, or comparatively worthless. Any by planting stones of superior kinds, may, in a few s, have valuable, new varieties in fruit, and they can ys be found in almost every neighborhood.

me connoisseurs in fruit, and a few others, prefer white- ed peaches, with a vinous or smart sub-acid flavor; but n and children, generally the great majority, go for -fleshed, sweet, luscious fruit, and it is in demand in rket. Besides, the yellow-fleshed are more hardy in storms, bear transportation better, and keep better ig picked; therefore the experienced cultivator gen- y prefers them for the market. Those of a vinous r should be well ripened on the tree, and eaten soon after ered, which renders them less adapted to the market.

any writers on the peach have cultivated foreign kinds ively, and in sheltered gardens, and they recommend o the neglect of native varieties; while those who have more largely into the culture, and whose opinions are known to the public, generally reject foreign sorts, as find excellent natives more hardy and profitable.

e have carefully examined into the character and merits number of superior natives of New England, unknown e public, and introduced them into this work, which for orchard culture, in this and other similar latitudes, excel those of foreign or more southern origin; and we have no doubt that some of them will prove valuable in all parts of the country; the trees being hardy, vigorous and productive, and the fruit hardy, large, beautiful, and excellent, selling high in our market, in spite of competition from immense crops in warmer climes.

We are trying to make an improvement in peach culture, in rather cold regions, like this, and to extend it still further north, by valuable, early seedlings, true to their kind; preventing the tenderness of trees, and trouble incident to budding in cold climates. We already have several excellent seedlings, which we have described, and are now making experiments on 40 or 50 other promising kinds, from which to select an assortment. Others are trying the same system with success. Seedlings are more hardy. (Page 60.)

1. EARLY SWEETWATER. Medial; roundish; whitish; flesh white, melting, sweet, but not excellent nor hardy. Freestone. Aug. 15 to 25. Globose glands.

2. EARLY TILLOTSON. Medial; round; mostly red; flesh whitish, red at the stone, melting, juicy, fine high flavor. Mostly freestone. Aug. 15 to 30. Apt to mildew in the North. In Virginia it is excellent. Leaves serrated, glandless. Small flowers. Origin, Western N. Y.

3. EARLY CHELMSFORD, *Mammoth*. Large; roundish; suture clear round, deep on one side; white, with a bright red cheek; flesh white, very melting and juicy, of a very delicious, slightly vinous flavor. Freestone. 20th to last of Aug. We find this very hardy, vigorous, and productive, and one of the very best, handsomest, and largest of early peaches. Glandless. Origin, in the North.

4. EARLY MALDEN. A fine early variety. Freestone. Aug. 20. Leaves slightly serrated, glandless. Origin, Malden, Canada West.

5. TUFTS'S EARLY. Rather large; roundish; flesh white, tinged with red, melting, very juicy, of a sweet, delicious flavor. Aug. 20 to Sept. 1. Globose glands. Vigorous and productive. By Mr. E. Tufts, Cambridgeport, Ms.

6. EARLY YORK. Medial; roundish, inclining to oval, slight suture; pale yellowish-white, red blush in the sun, dark red and nearly covering the fruit; flesh greenish-white, tints of red at the stone, tender, melting, delicious. Freestone. Last of Aug. One of the very finest early kinds.

Leaves serrated, glandless. Flowers large. In some situations the ends of the branches mildew. Native.

7. White Imperial. Tolerably large; depressed, hollow at the top, large cavity at the stem, distinct suture; yellowish-white, with a slight reddish tinge in the sun; flesh whitish, melting, juicy, with a sweet and excellent flavor. Freestone. Last of Aug., 1st of Sept. Hardy, and adapted to northern regions; vigorous and good bearer; one of the best. Originated by Mr. David Thomas, Cayuga Co., N. Y.

8. Early Washington. Very large; roundish, very deep suture on one side, pointed at the apex; flesh white, very fine texture, juicy, sweet, rich, with a fine aroma. Freestone. Last of Aug. and 1st of Sept. Of this vicinity. Native.

9. Walter's Early. Large; roundish; white, with a red cheek; flesh whitish, red tinge at the stone, melting, juicy, sweet, and pleasant. Last of Aug. and 1st of Sept. Adapted to light soils. Popular in N. J., where it originated. Not suited to the North, excepting in warm gardens. Globose glands.

10. Red Rareripe. Tolerably large; roundish; large suture; white, mottled with red, dark-red cheek; flesh whitish, red at the stone, melting, juicy, with very rich and high flavor. Freestone. Last of Aug. and 1st of Sept. Leaves serrated, glandless. Small flowers. One of the best in its season, but liable to rot in wet weather in N. England.

11. Strawberry, *Rose*. Medial; oval; mostly red; melting, juicy, rich, delicious. Native of N. J., where it is extensively used for the orchard. Last of Aug. and Sept. 1. Reniform glands. Small flowers.

12. Royal George, *Early Royal George*, *Red Magdalen*. Medial; roundish; white; red cheek; flesh whitish, red at the stone, melting, rich, delicious. Very liable to mildew; not worth cultivating. Last of Aug. and 1st of Sept.

13. Coolidge, *Coolidge's Favorite*. Large; roundish; suture at top; very smooth, white, with a crimson cheek; flesh very melting and juicy, with a rich sweet, highly delicious flavor, of the very first character. Freestone. Sept. 1. Tree hardy, vigorous, and productive; but the fruit is too tender for transportation to market; it is eaten by bees, wasps, &c., and it is very liable to injury from wet weather when ripening. Excellent for the amateur; good also for the private garden, but others are more sure. Originated by Mr. J. Coolidge, Watertown, Ms.

14. HATCH. Very large; roundish, pointed; shallow suture; deep yellow, blush in the sun; flesh yellow, melting, sweet, and excellent. Freestone. Sept. 1. It produces the same from the seed, which, with its earliness, hardiness, and superior quality, admirably adapts itself to the North. We have hundreds of seedlings perfectly uniform. Globose glands. Originated by S. O. Hatch, Franklin, Ct.

15. EARLY NEWINGTON FREESTONE. Rather large; round, distinct suture, one side the fruit the largest; yellowish-white, dots and streaks of red, a rich red cheek; flesh white, red at the stone, melting, juicy, of a rich vinous flavor. Sept. 1. Mostly freestone when fully ripe. Reniform glands. Small flowers. Supposed to be a native.

16. GROSS MIGNONNE, *Royal Kensington*. Large; roundish; suture on the shorter side; yellow, deep red in the sun; flesh whitish, red at the stone, juicy, melting, of a rich vinous flavor. Freestone. Sept. 1. Globose glands, large flowers. Origin, France.

17. LARGE EARLY YORK, *New York Rareripe* of Coxe. Large; roundish, slightly oval; white, tending to yellow, broad rich blush; flesh white, firm, juicy, of a rich fine flavor. First of Sept. Much cultivated on Long Island, and in N. Y. Globose glands. Origin, Flushing, N. Y.

18. HAINES' EARLY, which Barry recommends as one of the best, is regarded by some as the same as the above, by others as distinct.

19. GEORGE THE FOURTH. Large; round, broad suture; pale yellowish-white, dark red cheek; flesh melting, of a rich luscious flavor. 1st of Sept. Globose glands. Small flowers. One of the finest for garden culture. Origin, New York City. Some suppose that this is identical with Large Early York.

20. NOBLESSE, *Vanguard*. Large; roundish; pale green, with a red cheek; flesh melting, very juicy, with a high luscious flavor. Freestone. First part of Sept. Leaves serrated, and glandless. Origin, England.

21. MALTA. Tolerably large; roundish, flattish, suture on one side; pale green, with spots and blotches of dull purple in the sun; flesh greenish, dark red at the stone, melting, juicy, with a rich vinous and excellent flavor. Freestone. Early in Sept. Tree hardy, durable, moderate and regular bearer. Glandless. Large flowers. Foreign.

22. MORRIS'S RED RARERIPE. Large; roundish, depressed

at top, distinct suture; greenish white, bright red cheek, flesh greenish white, red at the stone, very melting and juicy, with a fine sweet, rich flavor. Freestone. Former part of Sept. Globose glands. Small flowers. Esteemed highly in the Middle Region and further South. Originated by R. Morris, Esq., Philadelphia.

23. MOORE'S FAVORITE Large; roundish, suture round the fruit; white, with a broad bright blush; flesh white, fine, juicy, of a rich vinous flavor; stone small, free. Sept. 1 to 15. Tree hardy, vigorous. Large leaves with globose glands. Garden of Mr. H. K. Moore, Chelsea, Ms.

24. LARGE EARLY. Large; roundish, flattened at base, suture quite round it; whitish, red cheek, purplish in the sun; flesh white, red at the stone, delicate, of a sweet, very rich, and most delicious flavor. Stone very small. Sept. 1 to 15. Hardy, vigorous, and productive. This name is a synonym of Large Early York, and improperly, as it is not very early. Much cultivated in Bristol Co., Ms.

25. BRIGGS. Large; flattish-round; suture mostly round it; white, nearly covered with bright red; flesh white, tinged with red at the stone; very juicy, of a rich, sweet, slightly vinous flavor. Hardy. Has produced its like from seed for 20 years. Freestone. Sept. 1 to 15. We consider this a valuable acquisition to our seedling list. Origin, Dedham, Ms.

26. YELLOW RARERIPE. Large; roundish; deep yellow, rich red cheek; flesh yellow, red at the stone, melting, juicy, of a fine, rich, vinous flavor. Former part of Sept. Native.

27. YELLOW ALBERGE, is good on light soils, but Briggs, Large Early, and other natives of the same time, are better.

28. JAQUES, *Jaques's Rareripe*. Extremely large; roundish-oblong, with a prominent point; yellowish, with a bright red cheek; flesh yellow, melting, juicy and pleasant. Freestone. 1st to 15th of Sept. Vigorous and productive. Not of the highest flavor, but very salable. Only tolerably hardy. Origin, West Cambridge, Ms.

29. HALE'S MELOCOTON. Large medial; oblong, flat at the base, slight suture on one side; bright yellow; flesh yellow, of a very rich, sweet, and excellent quality. Keeps well. Freestone. Sept. 1 to 15. By Col. E. Hale, Stow, Ms. Produces its like from seed, and sufficiently early for more northern regions.

30. CRAWFORD'S EARLY MELOCOTON, *Crawford's Early*,

*Hill's Lemon Rareripe.* Extremely large; roundish, point prominent; slight suture; yellow, with a red cheek; flesh yellow, melting, rather acid, pretty good. 1st to 15th Sept. Hardy, vigorous and productive. Quality medial, but salable, from its size and beauty. Globose glands. Small flowers. Middletown, N. J.

31. LINCOLN. Very large; roundish, large suture; rich yellow; mostly covered with dark purplish red, much furzy; flesh yellow, with a tinge of red at the stone, juicy, of a very rich, sweet and excellent flavor. Freestone. Sept. 5 or 10, to 20 or 25. Very hardy and productive. Fruit hardy. Globose glands. Has been cultivated 50 years in Lincoln, Ms., and ranks with the most profitable.

32. CUTTER, *Cutter's Rareripe.* This is almost precisely like Lincoln, excepting it ripens a few days earlier, and is not so furzy. Same glands.

33. BREVOORT. Large medial; round; suture deep at top; yellowish-white, bright red cheek; flesh rather firm, red tinge at the stone, of a rich, sweet high flavor. Middle of Sept. Reniform glands. Small flowers. Good for the garden. By H. Brevoort, Esq., New York.

34. TARBELL. Very large; roundish, little flattened at the base, broad, suture nearly round it; rich yellow, mostly covered with deep red; flesh yellow, red at the stone, very juicy, rich, sweet, and delicious. Sept. 10 to 25. The tree hardy, vigorous, and productive. Fruit hardy. One of the best for orchard culture, particularly in the North. Cultivated by Mr. C. H. Tarbell, Lincoln, Ms., a skilful fruit-grower.

35. BELLEGARDE. Large; round; shallow suture; pale yellowish-green, a red cheek, with streaks of purple; flesh red at the stone, a little firm, very melting, juicy, and high flavored. Middle of Sept. Globose glands; small flowers. French origin.

36. CLARKE. Very large; roundish; yellow, red blush; flesh yellow, tinge of red at the stone, very juicy, rich, sugary, of a peculiar, fine aroma. Sept. 10 to 20. A new seedling, by Mr. A. Clarke, Sherburne, Ms.

37. NEWMAN. Size rather large; round; greenish-white, blush in the sun; flesh white, very juicy, melting, sweet and slightly vinous. Sept. 15 to 25. Medial growth. New seedling by Mr. Chas. Newman, Reading, Ms. One of the most hardy.

38. Owen, *Owen's Lemon Rareripe*. Very large; roundish; large suture; rich yellow, mostly covered with dark-red or purplish-red in the sun; flesh yellow, red tinge at the stone, tender, very juicy, of a delicious saccharine and slightly sub-acid flavor. Freestone. Sept. 15 to 30. Globose glands. A beautiful and excellent variety. The original tree is in the garden of Mr. J. Owen, Cambridge, Ms.

39. Smith's Favorite. Very large; roundish; deep suture; yellow, mostly covered with deep rich red; flesh yellow, juicy, of a sweet, rich and delicious flavor. First rate for general culture. Vigorous, hardy and productive. Fruit hardy. Freestone. One of the best for market. Reniform glands. Sept. 15 to 30. Cultivated by Mr. Calvin Smith, Lincoln, Ms., a very successful peach-grower.

40. Hartshorn. Large; roundish-oval; rich yellow deep blush; flesh has a peculiar coarse grain, that fits it admirably for preserves; saccharine, and tolerably pleasant for eating. Keeps long. Clingstone. Sept. 15 to 30. Produces the same from seed. We have seedlings of it that are uniform. By Mr. J. Hartshorn, Reading, Ms.

41. Allen. Small; roundish; white; red cheek; flesh white, very juicy, of a pleasant vinous flavor. Hardy, and good bearer. Sept. 15 to 30. Has been raised 40 years from seed, uniformly true. Cultivated by several of its name, in Walpole, Ms.

42. Large White Clingstone. Large; round, slight suture, small point; white, with a reddish cheek or dots of red in the sun; flesh whitish, melting, juicy, with a sweet, high, luscious flavor. Highly valuable for preserves. Middle to last of Sept. Tree hardy, vigorous, long-lived and productive. Globose glands. Small flowers. Adapted to general culture in the N. England and Middle States. Origin, N. Y.

43. Tufts's Rareripe. Medial; roundish; yellowish, with a bright red cheek; flesh yellow, melting, very sweet and luscious. Freestone. Middle to last of Sept. Very hardy, vigorous and productive. Globose glands. Originated by Mr. Bernard Tufts, Billerica, Ms. Produces the same from seed. We have hundreds of seedlings, all perfectly uniform.

44. Bergen's Yellow. Very large; roundish; depressed, suture distinct; a dark red cheek, and dots of red on an orange ground; flesh yellow, melting, very juicy, with a rich and excellent high flavor. Freestone. Sept. 20 to 30. Good

grower and bearer. Reniform glands. Small flowers. One of the best for general culture. Origin, Long Island.

45. BATCHELDER. Large; round; white, with a deep blush; flesh white, melting, juicy, very pleasant, vinous flavor. Should be well ripened on the tree. Sept. 20 to 30. One of the most hardy, and often gives a crop when others fail. Origin, Haverhill, Ms. Produces the same from seed. We have young trees all uniform, and the same as the parents, from Mr. Wm. Batchelder, South Reading, Ms.

46. LATE ADMIRABLE. Very large; roundish, slightly oval; large suture, small point at top; yellowish-green; pale red cheek, marbled with dark red; flesh greenish-white, red at the stone, melting, remarkably juicy, with a most delicious flavor. Freestone. Sept. 20 to 30. Hardy and productive. Globose glands. Small flowers. Fine for the private garden; rather tender for market. Origin, France.

47. LATE RED RARERIPE, *Prince's Red Rareripe*. Large; roundish-oval; downy, yellowish, marbled with reddish dots, a red cheek; flesh white, deep red at the stone, melting, exceedingly juicy, with an extremely rich, high, luscious flavor. Freestone. 15th to last of Sept. Hardy, vigorous, and productive. One of the best for general culture. Globose glands. Small flowers.

48. FAVORITE. Large; oval; skin downy white, much red, dark in the sun; flesh red at the stone, rather firm, juicy, vinous, but not rich. Latter part of Sept. Hardy, productive, and good for the market. Small globose glands. Small flowers. Native.

49. OLDMIXON CLINGSTONE. Large; roundish-oval; suture at the top; yellowish-white, with a red cheek; flesh light, melting, juicy, with a very rich, high, luscious flavor. Last of Sept. Globose glands. Small flowers. A very valuable variety.

50. OLDMIXON FREESTONE. Large; roundish, inclining to oval; suture only at top; yellowish white, marbled with red, cheek deep red; flesh white, very red at the stone, tender, with a rich, smart, vinous flavor. 20th to last of Sept. Globose glands. Small flowers. A good kind for the market.

51. MORRIS'S WHITE, *White Rareripe*. Rather large; oval, suture medial, small point; white, seldom a purple tinge in the sun; flesh white, melting, of a rich sweet flavor. Last of Sept. Popular in warm regions, but poor in the North.

52. HALL'S DOWN-EASTER. Large; roundish; deep su-

ture; yellow, broad red cheek; middling quality. Last of Sept. Hardy, productive, and early bearer. We have seen noble specimens in Maine; it is rather late for that climate. Originated by M. Hall, Esq., an intelligent and zealous fruit-cultivator, of Portland, Me.

53. **Crawford's Late Melocoton**, *Crawford's Superb*. Extremely large; roundish-oval, slight suture; yellow; nearly half covered with dark red; flesh deep yellow, red at the stone, melting, juicy, with a very fine, rich, vinous flavor. Freestone. Last of Sept. and 1st of Oct. Hardy, vigorous, and productive. Globose glands. Small flowers. Splendid, beautiful, one of the finest. Origin, same as Crawford's Early.

54. **Lemon Clingstone.** Large; oblong, narrowed at top, pointed; flesh firm, yellow, red tinge at the stone, rich, sprightly, sub-acid. Not of the finest flavor, but large, beautiful, and popular in the market Last of Sept. and first of Oct. Hardy and productive. Reniform glands. Native of S. C.

55. **Red-Cheek Melocoton.** Large; roundish-oval, a swollen point; yellow; a deep red cheek; flesh yellow, red at the stone, melting, juicy, of a rich vinous flavor, frequently too acid. Freestone. Last of Sept. to Oct. 10. Globose glands. Small flowers.

56. **Kenrick's Heath.** Very large; oblong, with slight suture, and point at top; pale greenish-white, purplish-red cheek; flesh whitish, red at the stone, rather coarse, melting, juicy, sub-acid flavor, fine for preserves. Hardy, good bearer. Flourishes well in this region. Oct. 1. Reniform glands. Small flowers. Native of the North.

57. **Merriam.** Extremely large; short-oval; light yellow, bright red cheek; flesh yellow, red at the stone, melting, very juicy, of a sweet, luscious flavor. Of the first rank in size, beauty and quality. Oct. 1. Globose glands. New and promising. By E. Merriam, Roxbury, Ms.

58. **Druid Hill.** Very large; roundish; pale greenish-white, clouded with red; flesh greenish-white, purple at the stone, very melting and juicy, with an exceedingly high vinous flavor. Freestone. Early in Oct. Vigorous and productive. Globose glands. Small flowers. Downing, whom we copy, thinks it will be a great acquisition. New and not tried in the North. Originated by L. N. Rogers, Esq., Druid Hill, near Baltimore, Md.

59. Poole's Large Yellow. Large; roundish; suture on one side; deep yellow, dark red cheek; flesh yellow, red at the stone, juicy, rich, excellent. Early in Oct. Reniform glands. Valuable for orchard culture. Origin, Pa.

60. Heath, *Heath Clingstone.* Very large; oblong, large swollen point; suture on one side; downy, yellowish-white, tinge of red or brown in the sun; flesh greenish-white, very tender, melting, extremely juicy, with very high, rich, and most luscious flavor. In the Middle Regions of our country, (to which it is adapted, as well as further South,) it ripens in Oct. It is too late for N. England, except in warm locations in the southern parts. Largest and finest of clingstones. Native of Maryland.

61. Smock's Freestone. Large; oval, narrowed towards the stem; light yellow, a red cheek in the sun; melting, of a pleasant vinous flavor, tolerably juicy and pleasant. Former part of Oct., in the Middle States. Too late for the North. Origin, N. Y.

62. Tippecanoe. Very large; nearly round, with a point; yellow, broad red cheek; flesh yellow, juicy, of a fine vinous flavor. Clingstone. Oct. 1 to 15. Rather late for N. England, excepting for preserves, for which it is excellent. Great bearer. Reniform glands. Small flowers. By Mr. George Thomas, Philadelphia.

63. Monstrous Pavie. Probably the *Monstrous Cling* of the West. Very large, roundish-oval; whitish, much red; flesh firm, rather coarse, and wanting flavor, but showy and salable. Very late. Adapted to the southern part of the Western States, and further South. French origin.

64. Blood Cling. Very large; roundish-oval, distinct suture; very downy, dark purplish-red; flesh deep red, firm, and excellent for preserves. Oct. Reniform glands. Small flowers.

65. La Grange. Large; oblong; greenish-white, red tinge, full in the sun; melting, juicy, fine flavor. Oct. Late for this region. In the Middle States a valuable late kind for preserves. Native.

Ornamental Varieties. The *Double Blossomed* has large showy flowers in profusion, and is very beautiful. The *Flat Peach of China* is more curious than beautiful; the fruit being very flat. The *Weeping Peach* is singular, from its pendent habit.

## THE NECTARINE (*Amygdalus var.*)

Is only a smooth-skinned variety of the peach, more beautiful, and from its smoothness, very liable to be destroyed by the curculio. Nectarines are occasionally produced from peach-stones, and the reverse, which shows their identity.

1. LARGE EARLY VIOLET, of superior size, beauty, and excellence. So says Mr. Wm. R. Prince, of Flushing, N. Y.

2. VIOLET HATIVE, *Early Violet*, *Violet Aromatic*. Large, roundish; yellowish-green, red in the sun, mottled with brown; flesh whitish, with red at the stone, melting, rich, juicy, delicious flavor. Freestone. Sept. 1. Hardy and productive. Origin, France.

3. ELRUGE, *Claremont*, *Anderson's*. Medial; roundish-oval; pale green, blood red in the sun; flesh pale green, red tinge at the stone, melting, juicy, fine rich flavor. Former part of Sept. Reniform glands. Origin, England. Productive and one of the finest.

4. BOSTON, *Lewis*, *Perkins's Seedling*. Large; roundish, oval; bright yellow, deep red cheek, beautiful; flesh yellow, sweet, and pleasant; but not rich. Freestone. Sept. Globose glands. Origin, Boston, by Mr. Lewis. Brought into notice by Col. Perkins, of Brookline.

5. HUNT'S TAWNEY, *Hunt's Early Tawney*. Small medial; roundish-ovate; pale orange, dark red cheek in the sun, mottled with russety specks; flesh deep orange, melting, juicy, rich and good. Freestone. Latter part of Aug. Hardy and good bearer. Serrated and glandless.

6. HARDWICK'S SEEDLING. Very large; roundish-oval; pale green, red cheek; flesh pale green, red tints at the stone, melting, of a rich, fine flavor. Former part of Sept. Reniform glands. But little known in this country. Origin, England.

7. DOWNTON. Large; roundish-oval; pale green, deep red cheek; flesh pale green, little red at the stone, melting and rich. 1st of Sept. Reniform glands. Small flowers. Foreign.

8. NEW WHITE. Tolerably large; roundish; white, a red tinge in the sun; flesh white, tender, of a rich vinous flavor. Latter part of Sept.

Among the best kinds are Large Early Violet, Elruge, Boston, and Hunt's Tawney.

| Mar-ket. | Home use. | Qual-ity. | TABLE OF PEACHES, In order of ripening. (Page 11.) | |
|---|---|---|---|---|
| | | | Early Tillotson, | 15 to last of Aug. |
| 3 | 1 | 1 | Early Chelmsford, | 20 " " " " |
| | | 1 | Early Malden, | " " " " " |
| | | | Tufts's Early, | " " " " " |
| | 7 | 1 | Early York, | " " " |
| 19 | | 1 | White Imperial, | " " " |
| 10 | | 1 | Early Washington, | Last of Aug. and 1st Sept. |
| | | | Red Rareripe, | " " " " " " |
| | | | Royal George, | " " " " " " |
| | 8 | 1 | Coolidge, | First of Sept. |
| 11 | | | Hatch, | " " " |
| | | | Gross Mignonne, | " " " |
| 9 | | | Large Early York, | " " " |
| | | | Haine's Early, | " " " |
| | 9 | 1 | George the Fourth, | " " " |
| | | 1 | Noblesse, | First part of Sept. |
| | | | Morris's Red Rareripe, | Former part of " |
| | 10 | | Moore's Favorite, | " " " " |
| 7 | 2 | 1 | Large Early, | " " " " |
| 13 | | 1 | Briggs, | " " " " |
| | | | Yellow Rareripe, | " " " " |
| | | | Jaques, | " " " " |
| 15 | 15 | 1 | Hale's Melocoton, | " " " " |
| 1 | | 1½ | Crawford's Early Melocoton, | 5 to 15 " " |
| 16 | | | Cutter, | Sept. 5 " 20 |
| 6 | 11 | 1 | Lincoln, | " " or 10 to 20 or 25 |
| | | | Brevoort, | " " " " " " " " |
| | | | Bellegarde, | " " " " " " " " |
| 5 | 3 | 1 | Tarbell, | " 10 " 12 " 25 |
| | | | Newman, | " 15 to " |
| 14 | 12 | 1 | Owen, | " " " " |
| 2 | | 1 | Smith's Favorite, | " " " 30 |
| | 17 | | *Hartshorn*, | " " " " |
| | | | Large White Cling, | " " " " |
| 18 | 16 | 1 | Tufts's Rareripe, | " " " " |
| 8 | 4 | 1 | Bergen's Yellow, | " 20 " " |
| | 18 | 1 | Late Admirable, | " " " " |
| 17 | 13 | | Batchelder, | " " " " |
| | | | Late Red Rareripe, | " " " " |
| | | | Oldmixon Cling, | Last of Sept. |
| | | | Morris's White Rareripe, | " " " |
| | | | Oldmixon Freestone, | " " " |
| 4 | 5 | 1 | Crawford's Late Melocoton, | Last of Sept., 1 of Oct. |
| | | | Lemon Clingstone, | " " " " " " |
| | | | Red Cheek Melocoton, | " " " and into " |
| | | | *Kenrick's Heath*, | Oct 1st. |
| | 14 | 1 | Meriam, | " " |
| 12 | 6 | 1 | Druid Hill, | Early in Oct. |
| | | | Heath, | Former part of Oct. |
| | | | Tippecanoe, | " " " " |
| | | | Monstrous Pavie, | Oct. |
| | | | Blood Cling, | " |
| | | | La Grange, | " |

For *Northern Culture* particularly, we have introduced a number of hardy natives of the highest rank, such as Early Chelmsford, Large Early, Briggs, Cutter, Lincoln, Tarbell, Owen, Smith's Favorite; and for this and a still more Northern region, Tufts's Early, Hatch, Briggs, Hale's Melocoton, Hartshorn, Tufts's Rareripe, and Batchelder, are valuable, as they are hardy natives of the North, and may be propagated true to their kind, by seed. Page 160.

For the North, in a small way, Gen. Josiah Newhall, of Lynnfield, a very skilful cultivator, recommends budding early kinds on plum stocks, to dwarf them; after one year's growth, cut back one third of the last growth, in Nov., bend the branches towards the centre, and tie them. Lay leaves or other litter around the roots, set branches of evergreens in the ground, and tie them snugly around the tops of the peach trees. This will save them from the hot sun, in mild days, and from a sudden morning thaw, after a freezing night.

Early seedlings are adapted to this mode, and they may be dwarfed by heading-in (page 183.) In Russia, tender trees are cultivated by low horizontal training, the snow covering and protecting the branches. When snow is wanting, they may be covered with litter or mats; or in the fall, laid on the ground and covered with earth.

Ernst recommends the following, as free from any defective drawbacks in that climate; Early York, Red Rareripe, Yellow Rareripe, Red Cheek Melocoton, Morris White Rareripe, George the Fourth, Noblesse, Gross Mignonne, Lemon Freestone, Monstrous Cling, Late Admirable, Late Heath.

Kirtland and Elliott recommend — For the *Garden*, Early Tillotson, Early York, Early Yellow Rareripe, Morris's Red Rareripe, President, Oldmixon Freestone, Malta, Crawford's Early, Crawford's Late, White Imperial, Ward's Late Free, Hyslop's Cling.

For *Market* — Early Yellow Rareripe, Early York, Morris's Red Rareripe, Crawford's Early Melocoton, President, Red Cheek Melocoton, Golden Ball, Crawford's Late Melocoton, Lemon Cling, Ward's Late Free, Hyslop's Cling, Heath Cling, (Heath) Bergen's Yellow, and many others, have not been fully tested here.

The National Convention of Fruit-Growers, recommend, Gross Mignonne, George the Fourth, Coolidge's Favorite, Bergen's Yellow, Early York, Large Early York, Morris White, Oldmixon Freestone, Crawford's Late. For *Particular Locations*, Heath Cling.

Barry recommends for a succession from Aug. 1 to Oct., Early Tillotson, Early York, Haine's Early Red, Coolidge, Yellow Alberge, Crawford's Early Melocoton, Jaques, White Imperial, Lemon Clingstone, Large White Clingstone.

## THE DOMESTIC PLUM, (*Prunus domestica.*)

The Plum is a native of Asia, the South of Europe, and America; but most of our cultivated kinds are foreign, or descendants from them. It is a small tree, of a rather low, spreading form, generally of rapid growth, and moderate duration, often rather short-lived.

USES. The plum is a fine dessert fruit, some varieties being remarkably rich and luscious. It is used extensively for preserves, for which it is excellent. Some acid and austere kinds are used exclusively for this purpose. It is also used for pies, tarts, sauces, and various condiments. In France, dried plums are an important article in commerce. Varieties called prunes are used in this way. Plums, well ripened, and used moderately, are nutritious and healthful. but in excess they are injurious, as they are very rich and cloying.

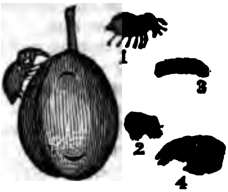
SOIL AND LOCATION. The best soil is a strong, moist, rich loam, inclining to clay, a dark, heavy mould, or a moist, yellow loam. A black, muddy soil, moist, but not wet, is excellent. The plum flourishes well on any tolerably moist tillage, and with care in culture and manure, to guard against drought, it succeeds on soils tolerably dry; and some varieties are well adapted to rather dry soils. Light soils may be prepared for the plum; (page 30;) but the curculio is more liable to destroy the fruit on dry land. The plum is usually most productive in hollows, and low, rich, moist soils, not being liable to kill in the bud, like the peach and apricot. But on suitable soil, it succeeds also on high lands.

PROPAGATION is generally by budding and grafting. Some kinds are continued by seed true to their kinds. Seedlings are sometimes continued by suckers, to which the plum is often much inclined. Stocks are usually raised from seed. As soon as the stones are separated from the pulp, which is done in the same way as cherries, plant them, or put them in moist earth in a box, and set them in the cellar, or bury them in the ground, in the shade, at the surface, and sow in fall or spring. Much care is necessary in keeping the seeds just moderately moist, and sufficiently exposed to the atmosphere to cause the stones to begin to crack open in season for spring planting, and yet retard them when forward, that they may not grow too soon. Plant in a rich, mellow soil, in drills 1, 2, or 3 feet apart, as you may have land, or choose to cultivate, with a horse or not. After 2 years' growth, or one, if very vigorous, plant out in spring, as directed for apples, and if they are thrifty, bud the same season.

With a vigorous stock, half an inch or more in diameter, graft at the ground, and it will soon send up a strong stem. Better graft the Canada stock an inch or two below the surface, as the graft usually outgrows the stock, as the earth will hide the deformity, and re-rooting may be effected. Peach stocks are sometimes used for the plum, but they are less hardy and durable, though they do well in some cases.

PLANTING, CULTURE, MANURE, AND PRUNING. As many varieties are naturally small, and others are often made so by the dwarfish nature of the stocks, and diseases and other evils are apt to shorten the life or check the growth of the plum, it is best to set near, and cut away on interfering, as recommended for the apple and pear; for the plum bears early, and if set near, it will bear much fruit without interfering, and afford more profit. A rod apart is a good distance for plums, and but few trees attain a size to fill the space. This would give 160 to the acre; but if we would make the most from an acre, from plums, we would set ⅔ a rod apart, 360 trees to the acre; they would soon begin to bear, and continue for years, affording more than double the profit of distant planting, and when they interfered, which some would never do, remove or head in the poorest.

The land should be well manured and cultivated. (See page 51.) No weeds or grass should grow around the trees, and the soil should be stirred often, especially a dry soil, in a dry season. (See page 52.) The larger crop, superior size, and excellence of fruit, will far more than pay for good culture. Prune but little, only cutting away dead and decaying and interfering limbs. If a tree becomes top-heavy, or needs pruning to renovate it when declining, or becomes stinted and barren, *shorten-in* the limbs, as in pruning peaches, but do not cut at the trunk, excepting decaying limbs. Stone fruit should not be pruned at the stem, but at the ends of the branches. Use the same manure as for the apple and pear. In the wood, bark, and the fruit of the plum, there is a considerable quantity of lime and potash. So apply wood ashes, lime, old mortar, plaster, &c. Salt is a good manure to promote growth and health, and a guard against insects.



Curculio, or Plum-weevil, (*Rhynchœrus nenuphar,*) is here represented in its different stages.

(1.) Curculio in the perfect or beetle state, as large as life.

(2.) Its assumed form, when disturbed, or shaken from the tree.

(3.) Larva, or worm, as found in the fallen fruit.

(4.) Pupa, or chrysalis form, in which it lives in the ground, and the last stage before the perfect state.

On the figure of a plum are the crescent-shaped marks, as made by this insect.

The color of the curculio is dark brown, variegated with spots of white, yellow, and black. These insects appear from the latter part of April until the last of July, according to the season. Soon after the blossoms fall, they begin to puncture the little plum with their snout or rostrum, and lay an egg in the wound. The gum oozes out, the egg hatches, the worm eats towards the centre of the fruit, which falls, often before a quarter grown, and the worm enters the earth, where it remains in the pupa state, some say only a few weeks, others say till the next season. Its habits are not well known. It flies from the ground to the tree.

These insects are very destructive to plums, sometimes destroying whole crops to a vast extent. They also attack other smooth-skinned fruits, such as apricots, nectarines, cherries, and apples. But cherries and apples are not generally much injured, though the former are often marked by these insects. Among the mischievous curculios is a harmless insect of a larger size and similar appearance, which may be the male.

*Prevention and Remedies.* One of the best is a moist, heavy soil, affording the insect but a poor shelter in the ground; and plums flourish well in such soils, and so do apricots on plum stock. In most cases, 1 quart of salt to a small, 2 to a medial, and 4 to a large tree, or half a peck to a square rod, applied to the ground as far as the limbs extend, as soon as the snow is off in spring, has been a preventive; by affecting the insect in the earth, as some suppose; but Dr. Shurtleff thinks the salt gives a distaste to the fruit. We have generally found this effectual, and we have known numerous cases of its complete success. The salt is a good manure for the plum.

By jarring or briskly shaking the tree, when these insects are operating on the fruit, in morning and evening, they will fall, and may be caught on cloth, where they will be still till they may be destroyed. Give a sudden jar to the tree or branches, using a mallet covered with a pad, or soft, thick cloth. All the fallen fruit of plums should be picked up, and the worms destroyed. Or let hogs run under the trees for this purpose.

Take tubs, tight boxes, or other vessels, whitewash them inside, place them under the tree, almost up to the limbs, put in an inch or two of water, in the dusk of the evening, when curculios appear, and set a light in the tub, and many will be caught. Make the earth smooth around the trees, and let fowls run among them.

One person, who threw ashes on his trees, as the blossoms were going off, thought they were useful. Apply them when the dew is on. Two barrow-loads of fresh horse manure under some plum trees, just as the fruit began to swell, was thought to protect them from the curculio, by gases arising from fermentation.

A cultivator informed us, that after his plums had been destroyed several years by curculios, he put a layer of fresh oyster shells around his trees, three inches deep, and as far as the limbs extended, and beat them down hard. He was not troubled afterwards, during a number of years that he remained on the place. In other cases, the fruit has been saved by a brick pavement, or hard path, under the trees, preventing the insects from burrowing in the earth. Some think the parent is so sagacious as not to lay eggs where the progeny will not find a good burrow beneath. Numerous insects may be caught in bottles. (Page 74.)

Black Wart is a singular disease, commencing in a kind of tumor or swelling, and continuing to increase till it becomes a large, black bunch, disfiguring the tree, and spreading until it kills it. It also spreads rapidly from one tree to

*Black Wart.*

another. No satisfactory cause has ever been assigned for this disorder. It attacks both vigorous and stinted trees, old and young, in wet land and dry. Some have regarded salt, applied to the soil, and in solution to the affected part, as a sure remedy, but this has been disproved.

The only remedy is to cut off the bunches as fast as they appear, and burn them. Let there be no delay, and cut freely, to the excision of every diseased part. Though salt is not always a remedy or preventive of this disease, its use lessens its occurrence and severity. Copperas water, applied to the affected parts, after cutting off the black part, has appeared to be useful.

VARIETIES. We have many valuable kinds, as to quality, yet some are uncertain in production and hardiness of fruit, and some are new and have not been fairly tried and compared, so that it is difficult to make a selection; for many of great beauty and excellent flavor often fail, while other hardy and productive kinds, of inferior quality, are more profitable, especially for market. Such is the case with Lombard, Red Gage, Diamond, Smith's Orleans, Cruger's Scarlet, and others. Some that are hardy and productive are also excellent in flavor, but usually the finest kinds are delicate and uncertain.

Sometimes, in a large collection, a few trees of Smith's Orleans and Red Gage afford more profit than all the rest. Again, the coarse kinds, such as Diamond and Semiana, are the only productive varieties among many fine sorts. Several of great promise, such as Peach, Lawrence's Favorite, Jefferson, Imperial Ottoman, M'Laughlin, Washington Seedling, Ida Green Gage, and Schenectady Catharine, have not yet been extensively tried.

1. EARLY GENESEE. Medial; long-ovate; yellow. Same time as the White Primordian, and better bearer. Origin, Brighton, Monroe Co., N. Y. New. L. B. Langworthy, in Gen. Far.

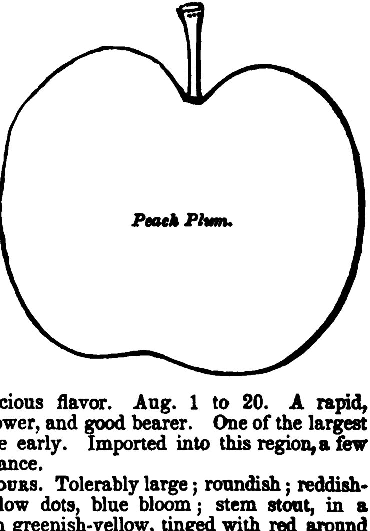
2. WHITE PRIMORDIAN, *Jaune Hative, Early Yellow.* Small; obovate; yellow; stem ½ inch long, slender, very narrow, deep cavity; flesh yellow, rather juicy, pleasant, but not high flavor. Last of July. The earliest, excepting Early Genesee. A slow grower, good bearer.

3. CHERRY, *Early Scarlet.* Small medial; round; bright

red, like a cherry; melting, soft, juicy, of a brisk, pleasant, sub-acid flavor. Last of July and first of Aug. Salable. Poor bearer, and the birds eat them. Downing says, Mr. S. Reeves, Salem, N. J., induces bearing by transplanting every 4 or 5 years, and he thinks root pruning would have the same effect; and that Mr. R. has a seedling of this species, the GOLDEN CHERRY plum, that bears abundantly.

4. HENRIETTA GAGE. Size of Green Gage; paler color; high flavor. Aug. 1. Fair grower and good bearer. Origin, Henrietta, Monroe County, N. Y. New. L. B. Langworthy, in Gen. Far.

5. PEACH PLUM, *Prune Peche*. Very large; flattish-round, broad, shallow suture on one side; brownish-red or salmon-color in the shade, purplish-red in the sun, golden russet specks and patches, blue bloom; stem short, rather stout, in a deep, narrow cavity; a small hollow at top; flesh greenish pale yellow; very juicy, of a sweet, lively, delicious flavor. Aug. 1 to 20. A rapid, strong, upright grower, and good bearer. One of the largest and best, and quite early. Imported into this region, a few years ago, from France.

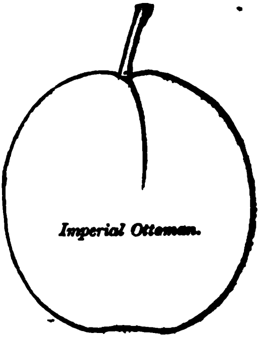

*Peach Plum.*

6. ROYALE DE TOURS. Tolerably large; roundish; reddish-violet, minute yellow dots, blue bloom; stem stout, in a small cavity; flesh greenish-yellow, tinged with red around stone, rather firm, juicy, of a fine flavor. Sept. 10 to 20. Not equal to Prince's Yellow Gage, but a little earlier. French origin.

7. EARLY ORLEANS, *New Early Orleans*, and *Wilmot's New Early Orleans*, are about the same. Medial; roundish-oval; dark red, purple in the sun; stem medial size, in a moderate

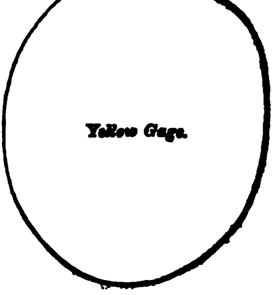
depression; flesh greenish, brisk and rather rich flavor. Freestone. Aug. 10 to 20 or 25. Productive. Branches downy. Sprangling grower. A prodigious bearer. Foreign.

8. IMPERIAL OTTOMAN. Medial; roundish, oval; pale greenish-yellow, marbled with darker shades, thin bloom, generally resembling the Imperial Gage; stalk medial length, slender, in a slight cavity; flesh melting, very juicy, sweet and excellent flavor. Almost freestone. Aug. 10 to 20. Few days earlier than Prince's Yellow Gage. Tree very hardy and uniformly productive, suited to almost any climate and soil; flourishes well in Bangor, Me. Fruit hangs pretty well, and is rather hardy.



*Imperial Ottoman.*

9. YELLOW GAGE, *Prince's Yellow Gage.* Large medial; oval, tapering a little to the top, slight suture; golden yellow, well covered with white bloom; stalk medial size, in a small cavity; flesh yellow, melting, rich, and sugary. Freestone. 12 to the 25th of Aug. The tree very hardy, vigorous, and good bearer; forms a large, spreading head. Mr. Henry Vandyne, a zealous fruit-grower of Cambridgeport, raised, in one season, 51 dollars' worth from one tree. The quality is superior to most plums of its season.



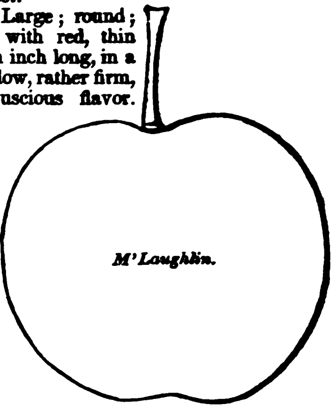
*Yellow Gage.*

10. HUDSON GAGE. Medial; oval; yellow, clouded with green; stem short, in a moderate cavity; flesh [illegible]lting, of a rich, spright[illegible]nt flavor. Almost [illegible]. 2d and 3d weeks in Aug.

11. **Morocco.** Medial; roundish; dark purple; flesh yellowish, juicy, rich, and sweet. Slightly cling. Aug. 10 to 20 or 25. Not first rate.

12. **Drap d'Or,** or *Cloth of Gold, Yellow Perdrigon.* Small; round; bright yellow, few crimson specks; flesh yellow, sugary, rich, but sometimes rather dry. Freestone. 15 to 25 of Aug. Much esteemed in the West, and does well here, but too small for market.

13. **M'Laughlin.** Large; round; russet yellow, tinged with red, thin bloom; stem nearly an inch long, in a slight cavity; flesh yellow, rather firm, juicy, of a sweet, luscious flavor. Clingstone. August 15 or 20. Stout, vigorous growth; good bearer. Hardy for the North. Tried only in light soil. Originated by James M'Laughlin, Esq., Bangor, Me. Only a little known. Little regards it as first rate, especially for the North.



*M'Laughlin.*

14. **Apricot.** Large medial; roundish; yellow, tinged with red; melting, pleasant flavor. Aug. 20 to 30.

15. **Pond's Seedling.** Medial; roundish, slightly ovate; purple; stem short and slender; flesh yellowish, dryish, tolerably good. Freestone. Aug. 20 to Sept. 5. Productive. Origin, Boston.

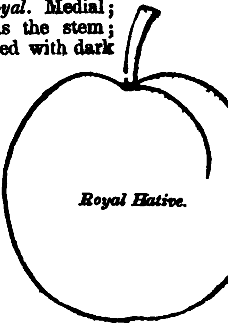
16. **German Prune,** *Quetsche, Sweet Prune.* Large; long-oval, swollen on one side, distinct suture; purple, thick blue bloom; stem moderate length, slender; flesh green, firm, sweet, and pleasant. Freestone. Latter part of Sept. Excellent for preserving and drying, and tolerably good for the table. A great bearer, and hangs long on the tree.

17. **Austrian Quetsche** is similar to the above, but rather later, and superior in flavor.

18. **Italian Damask.** Medial; roundish; brownish

violet; flesh firm, sweet, fine flavor. Freestone. L Aug. and into Sept. Tolerably good.

19. ROYAL HATIVE, *Early Royal*. Medial; roundish, little widest towards the stem; light purple, dotted and streaked with dark yellow, blue bloom; stalk ½ an inch long, in very slight cavity; flesh yellow, tender, juicy, of a very rich, high flavor. Freestone. Aug. 20 to Sept. 5. Resembling Purple Gage, in appearance, quality, leaf, and growth, excepting wood is very downy. 3 weeks earlier. One of the very best early plums. Hardy, vigorous, and productive. French origin.


*Royal Hative.*

20. YELLOW EGG PLUM, *White Magnum Bonum*. V large; oval; distinct suture; yellow, with white dots, t white bloom. Stalk an inch long, stout; flesh rather c and acid. Clingstone. Last of Aug. and first of Sept. for the dessert. Excellent for cooking, and salable; poorer bearer than the Purple Egg.

21. CORSE'S FIELD MARSHAL. Tolerably large; oval; plish; flesh juicy, rather tart. Clingstone. Last of Origin, near Montreal.

22. DUANE'S PURPLE, *Duane's Purple French* &c Very large; oval; shallow suture red, reddish pu the sun, yellow specks, lilac bloom; stem nearly an long, slender, in narrow cavity; juicy, sprightly, ra sweet. Aug. 25 to Sept. 15. Moderate bearer.

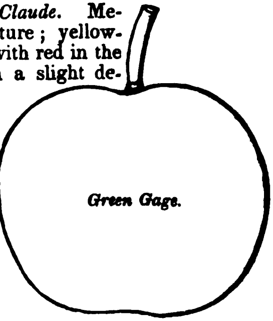
23. WASHINGTON, *Bolmar*. Very large; roundish-o similar to Jefferson, with a suture quite distinct near stalk; greenish dull yellow, deep yellow in the sun, times with dots or a tinge of pale crimson; a thin, bloom, stalk short, rather stout, in a shallow, wide cav flesh yellowish, firm, very sweet and luscious, but o rather insipid. Freestone. Aug. 25 to Sept. 10. Ha good grower, but moderate or poor bearer, and very to rot. Origin, New York city. Its large size gives popularity beyond its merits.

24. APPLE PLUM. Rather large; flattish, like a flat

ple; reddish-purple, specked and marbled with greenish-golden yellow, light blue bloom; stem ¾ of an inch long, stout, in a broad, deep cavity, at which is a deep suture; flesh greenish yellow, tender, of a rich, lively, saccharine, and vinous flavor. Aug. 25 to Sept. 10. Strong, vigorous grower, bearing not settled. Garden of Mr. D. U. Pratt, Chelsea. Probably a new and valuable variety.

25. Cruger's Scarlet. Large medial; roundish-oval, slight suture; lilac and fawn-color, bright red in the sun; stem half an inch long, in a shallow cavity; flesh orange, of a mild, pleasant flavor, but neither juicy nor rich. Last of Aug. and first of September. Hardy, and great bearer. A good, showy market fruit. It hangs on well. Not liable to injury by the curculio.

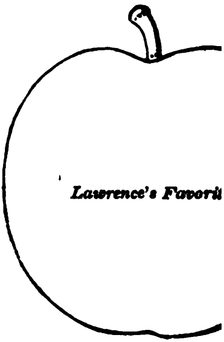
26. Green Gage, *Reine Claude*. Medial; flattish round, faint suture; yellowish-green, marbled or dotted with red in the sun; stem short, slender, in a slight depression; flesh green, very melting, of sweet, rich, luscious flavor. A standard of excellence. Freestone. Last of Aug. and into Sept. Grows slowly, scragly, and spreading. A good bearer. Fruit rather liable to crack in wet weather. There are various modifications of the Green Gage. We have a large variety here, which we have never seen excelled in flavor. Origin, France.



*Green Gage.*

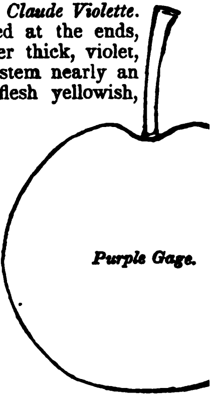
27. Washington Seedling. Large; oval; yellow, mottled with crimson; flesh very tender, sweet, and delicious. Nearly as large as Washington; handsomer, and superior quality. Last of Aug. to Sept. 10. A moderate grower. Origin, Ives's garden. New, and not yet tested. From seed of Washington.

28. Denniston's Superb. Medial; round, slightly flattened; distinct suture; yellowish green, with few purple blotches, thin bloom; rough stem, ¾ inch, in a middle-sized cavity; flesh tolerably juicy, of a rich vinous flavor. Last of Aug. and first of Sept. Seedling raised by Mr. Denniston, Albany. N. Y.



*Lawrence's Favorit*

29. **Lawrence's Favorite.** Rather large; roundish, slightly oval, with flattish ends; yellowish-green, clouded with darker streaks, light greenish bloom, at full maturity brownish blotches and reddish specks around the stem; stalk short and slender, in a small cavity; flesh greenish, melting, very juicy, of a brisk, delicious, vinous flavor, resembling and almost equal to the Green Gage, and larger. Almost freestone. Last of Aug. to Sept. 15. Vig right growth; moderate bearer. Originated by Lawrence, Hudson, N. Y.



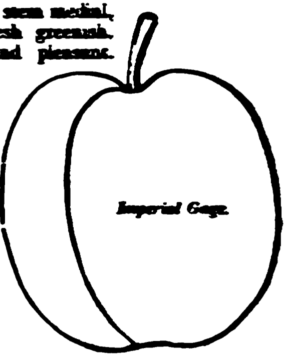
*Purple Gage.*

30. **Purple Gage,** *Reine Claude Violette.* Medial; roundish, flattened at the ends, shallow suture; skin rather thick, violet, yellow dots, blue bloom; stem nearly an inch long, rather stout; flesh yellowish, rather firm, of a rich, sugary, high, luscious flavor, almost equal to Green Gage. Freestone. Aug. 25 to Sept. 25, and lasts through the month. Fruit very hardy, hanging long on the tree, shriveling slightly. Excellent for the dessert and for preserves. Great bearer. Foreign.

31. **Ida Green Gage.** A new seedling from the Gr[illegible] Gage, which it re- [illegible] About the same [illegible] and quality, excepting purplish-red in [illegible] later. Native of Mount Ida, near Tro

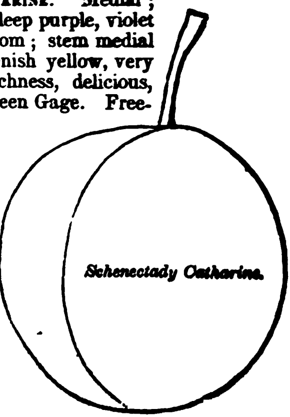
[illegible] **Gage.** Large medial; roundish oval;

yellow and brownish red; stem medial, in a narrow cavity; flesh greenish, melting, very sugary and pleasant. Freestone. Aug. 25 to Sept. 15. Hardy, very vigorous, and productive. Not liable to rot. Very profitable for the market. Origin, Flushing, N. Y.


Imperial Gage.

33. **Imperial Gage,** **Prince's Imperial Gage,** *White Gage* by some around Boston. Large medial; oval, distinct suture; pale green, with a yellow tinge, and clouding of darker green, thick white bloom; stem medial, in a moderate cavity; flesh greenish, melting, very juicy, of a rich, sprightly, delicious flavor. Mostly freestone. 1 to 15 Sept. A vigorous grower and prodigious bearer. Dark shoots and leaves. Fruit rather inclined to rot. Adapted to rather dry soils. Native of Flushing, N. Y.

34. **Schenectady Catharine.** Medial; roundish, shallow suture; deep purple, violet in the shade, thin azure bloom; stem medial length, slender; flesh greenish yellow, very melting, juicy, honeyed richness, delicious, high flavor, equal to the Green Gage. Freestone. Early in Sept. *Hovey's Magazine.*

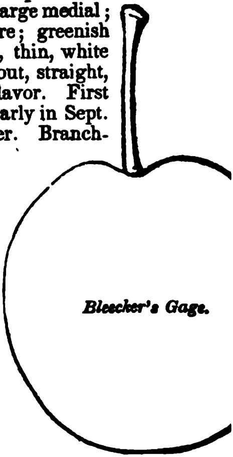

Schenectady Catharine.

35. **Goliath.** Large; roundish oblong; purplish red; handsome, juicy, brisk, but not excellent. Early in Sept.

36. **Horse Plum,** *Large Early Damson, Sweet Damson.* Medial; oval; reddish, purple in the sun; rather dry and acid. Freestone. First of Sept. Very common, especially in the

Middle States. The seeds produce good stocks, or kind of fruit, which is rather poor.

37. **Bleecker's Gage.** Large medial; roundish oval, slight suture; greenish yellow, specks in the sun, thin, white bloom; stem quite long, stout, straight, downy; sweet, luscious flavor. First rate. Almost freestone. Early in Sept. Hardy, thrifty, good bearer. Branches downy, leaves dark green. Very popular in Northern and Western N. York.

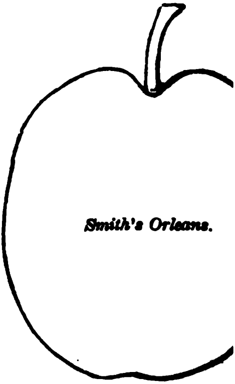


*Bleecker's Gage.*

38. **Isabella.** Medial; oval; red; handsome; rather rich, brisk, subacid; good and showy, but not first rate. Early in Sept.

39. **Orange.** Extremely large; flattish-oval; yellowish white dots, purplish red near the stalk, which is three fourths of an inch long, in a narrow cavity; flesh yellow, rather coarse texture, not very good flavor, but salable from its large size, and profitable from its great bearing. Freestone. Former part of Sept. Origin, Rhinebeck, N. Y., supposed.

40. **Smith's Orleans,** *Cooper's Red*, by some incorrectly called *Violet Perdigron*, or *Red Magnum Bonum*. Large; roundish-oval; broadest at the base, distinct suture on one side: reddish purple, azure short, slen-

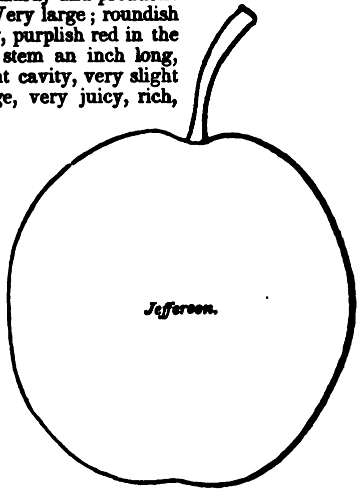


*Smith's Orleans.*

der, in a deep, narrow cavity; flesh yellow, rather firm, juicy, of a sprightly, vinous flavor. Clingstone. Sept. 1 to 20. Tree hardy and vigorous, and adapted to various climates and soils. Very good for market. Rather inclined to rot, when hanging very thick.

41. DANA'S GAGE. Large medial; oval; pale yellow, clouded, thin bloom; juicy, sweet, of a lively and peculiar rank flavor, unpleasant to most persons. Clingstone. Former part of Sept. Hardy and productive.

42. JEFFERSON. Very large; roundish oval; golden yellow, purplish red in the sun, white bloom; stem an inch long, rather stout, in slight cavity, very slight suture; flesh orange, very juicy, rich, and high-flavored, almost equal to Green Gage. Almost freestone. September 1 to 20. A good bearer. Fruit not liable to rot, and hangs long. Among the best. Originated by Judge Buel, Albany.


*Jefferson.*

43. HULING'S SUPERB. Very large; roundish-oval; similar to Jefferson in size and form, distinct shallow suture; dull greenish yellow, thin, pale bloom; stem an inch long, stout, in a small cavity; flesh greenish yellow, texture little coarse, rich, sprightly, excellent flavor, with slight acid blended with sweetness. Sept. 1 to 20. A good grower, stout, blunt shoots. A moderate bearer. Origin, Pa.

44. NECTARINE, *Louis Philippe, Caledonian, Large Early Black, Bradshaw*. Very large; roundish; purple, a little blue bloom; stem two thirds of an inch long, stout, in a wide, shallow cavity; flesh greenish yellow, tinged with red, a little coarse, of middling quality only. Partially clingstone.

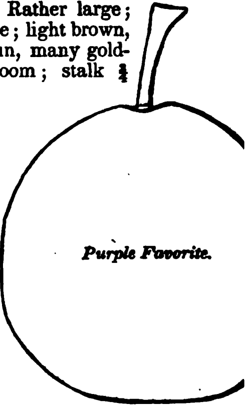
Sept. 1 to 20. A good grower and moderate bearer. I origin.

45. Imperial Lilac. A seedling by Dr. Shurtleff, he recommends as superior in flavor. But little know

46. Columbia. Extremely large; roundish; bro purple, many fawn-colored specks; thick bloom; st most an inch, stout, in a narrow cavity; flesh orange, dry, but rich, sugary, and excellent. Freestone. F part of Sept. Very productive. A fine fruit, but i and is apt to rot. Downing and Barry prefer it to D Purple, in quality. Better than Nectarine.

47. Red Diaper, *Diapree Rouge Mimms*. Large; ob reddish purple, few golden specks, blue bloom; flesh green, juicy, very melting, rich and delicious. Firs Freestone. Former part of Sept. Slow grower. bearer. Fruit hangs well; but little liable to rot.

48. Purple Favorite. Rather large; roundish-obovate, no suture; light brown, brownish purple in the sun, many golden specks, thin, blue bloom; stalk ¾ to 1 inch long, in slight depression; flesh pale-green, tender, melting, juicy, sweet, and unsurpassed in luscious flavor. Freestone. Sept. 5 to 20 (here). More juicy and melting than Purple Gage. Hardy, and good bearer, with the dwarfish habit of the Green Gage. Origin unknown. *Downing*.



*Purple Favorite.*

49. Purple Egg Plum, *Red Magnum Bonum*. Large; oval, distinct suture; pale red, deep in the sun, many gray spots; stalk long, slender; flesh gr firm, coarse, acid. Freestone. For preserves and co Former part of Sept. Salable in market, but generall bearer. Sometimes a great bearer on light soils.

50. Diamond. Large; oval; black, blue bloom; nearly an inch long, in a narrow cavity; flesh yellow texture, rather dry, slightly acid, wanting

. ] stone. During Sept. Hardy, great bearer. Fruit hardy, enduring storms, on the tree. Profitable for the market.

*Bleecker's Scarlet*. Medial; roundish-oval, ends, slight suture; pale red, with darker red olet-red in the sun, thin bloom; stalk two thirds of ong, slender, in a narrow cavity; flesh deep yellow, pleasant, but not excellent flavor. Clingstone. Sept. Hardy and vigorous. Great bearer; fruit hardy. the market. Adapted to light soils. Native.

Large medial; roundish; reddish-purple, ks; rather firm, melting, and juicy, of extremely is flavor. Sept. Fine for the garden.

AM. Large; oval; yellow, reddish in the sun; and pleasant. Middle of Sept. Origin, Pa.

NOTA BENE. Rather large; oval; dull-green e-brown in the sun, blue bloom; stem half an inch a round cavity; flesh greenish, rather firm, juicy, nd tolerably sweet. Freestone. Middle of Sept. andsome, and a good variety, particularly for the By Henry Corse, Esq., near Montreal, Canada. the best of his seedlings.

DAMSON. A well known, small, oval, purple plum, y, tart, and excellent for preserves; an enor sure bearer. Profitable for market. Latter part There are several varieties from seed. The HIRE is superior. The SWEET is less acid. The is later, too late for the North.

SHARP'S EMPEROR. Large; roundish-oval; red; pleas d handsome, not first rate; but a great bearer, and r market. Last of Sept.

DOMINE DULL, *German Prune*. Medial; long-oval; black, blue bloom; stem three fourths of an inch a slight cavity; flesh yellow, very juicy, becoming hangs on the tree, rich and sweet. Clingstone. part of Sept., and continues long. A profuse bearer.

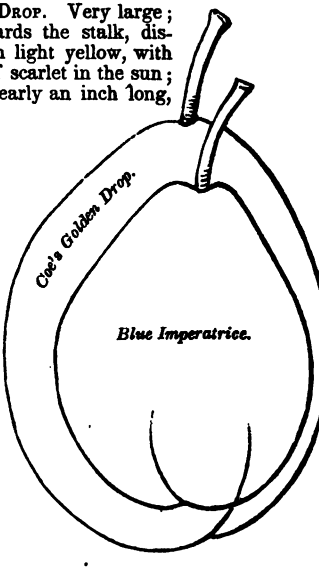
NA. Rather small; oval; dark blue; harsh, ves only, but a great and sure bearer, and the market. Hangs late. 15 Sept. into Oct. d Blue Imperatrice by some in this region.

*Roe's Autumn Gage*. Large medial; pale yellow, thin bloom; stem two thirds of an inch long, no cavity; flesh greenish yellow, juicy, of a sweet, delicious flavor. Freestone. Latter part of Sept. Hardy, very productive. This new plum flourishes well here, and promises to be one of the best late kinds. More profitable for the North, than Coe's Golden Drop. Originated by Wm. Roe, Esq., Newburgh, N. Y.

60. Corse's Admiral. Large medial; obovate-oval; light purple, yellow specks, lilac bloom; flesh sprightly and juicy, not first rate, but well adapted to the North, being a native of Canada. Late in Sept. Productive.

61. Lovett's Late Long Blue. Excellent and long keeping

62. Coe's Golden Drop. Very large; oval; narrowed towards the stalk, distinct suture; greenish light yellow, with specks and patches of scarlet in the sun; light bloom; stalk nearly an inch long, no cavity; flesh yellow, firm, melting, of a rich, sugary, delicious flavor. Clingstone. Last of Sept. to middle of Oct. Good bearer. Fruit hangs long, and keeps long off the tree. One of the best late kinds in the Middle and Western States, excepting the northern part. Too late for N. England, yet does pretty well in warm locations and favorable seasons.


Coe's Golden Drop.
Blue Imperatrice.

63. Blue Imperatrice. Medial; obovate; dark purple, thick bloom; stem rather long, slender, in a slight cavity; flesh yellowish, rather firm, dryish, but very rich, sugary; excellent for preserves, and for the table when fully ripe. Clingstone. Oct. and

into November. Hangs long on the tree, and keeps well after gathered. Tree hardy and very productive. Fruit very hardy. One of the best late plums. Foreign.

64. **St. Catharine.** Medial; obovate, distinct suture; pale yellow, sometimes reddish in the sun, white bloom; stem nearly an inch long, slender, in a slight cavity; flesh yellow, rather firm, juicy, of a sprightly, rich flavor. Clingstone. Last of Sept. and first of Oct. Great bearer. Valuable for preserving and for the dessert. In France used extensively for preserves.

65. **Manning's Long Blue Prune or Plum.** Very large; long-oval; dark purple, thick blue bloom; stem very long and slender, in a very slight cavity; flesh yellowish, firm, rather juicy, with a sweet, sprightly flavor. Almost freestone. Middle Sept. to last of Oct. Very great bearer. Fruit very hardy, and lasts long; excellent for the market. Manning had it from Philadelphia, without a name.

66. **Coe's Late Red.** Medial; roundish, with distinct suture; purplish light red, blue bloom; stem tolerably long, stout, in a very slight depression; flesh yellowish, tolerably firm and crisp, juicy, of a rich, pleasant, vinous flavor. Almost freestone. Oct. and Nov., in the Middle and Western States, where it is excellent, but we find it too late for this climate. Very vigorous and productive.

67. **Frost Gage,** *Frost Plum*. Small; roundish-oval, distinct suture; deep purple; flesh greenish-yellow, melting, rich, and sweet. Rather acid, and excellent for preserves while greenish; but when fully ripe, sweet and delicious for the table. Clingstone. Middle of Oct. and till late frosts. A tall, upright grower, and great bearer. Origin, Fishkill, N. Y., where it is extensively cultivated for the market. As it is late, it is in good demand in this market.

68. **Ickworth's Imperatrice.** Large medial; obovate; purple, embroidered with fawn color; stalk medial size; flesh greenish-yellow, juicy, of a sweet, rich flavor. Mostly clingstone. In the Middle Region ripens early in Oct., and will keep long, becoming dry and sugary, like a prune. A highly valuable variety, but rather late for the North. Foreign.

**Ornamental Varieties.** The **Double Flowering Sloe** is a large shrub, of great beauty, when in flower. The **Cherry** plum is pretty in flower as well as in fruit.

### TABLE OF PLUMS,
In order of ripening. (Page 11.)

| Market. | Home use. | Quality. | Hardiness. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 19 | | | Early Genesee, | | Last | of | July. | |
| | | 5 | | White Primordian, | | " | " | " | |
| | | 5 | | Cherry, | July | 25 | to | Aug. | 5 |
| 2 | 2 | 1 | | Peach, | Aug. | 1 | to | " | 20 |
| | | 4 | 2 | Royal de Tours, | " | 10 | " | " | 25 |
| | | 5 | | Morocco, | " | 10 | " | " | " |
| 17 | 15 | 1 | | Hudson Gage, | " | " | " | " | " |
| 15 | 12 | 1½ | 3 | Yellow Gage, | " | " | " | " | " |
| 6 | 6 | | | Imperial Ottoman, | " | 12 | " | " | " |
| 10 | | | | M'Laughlin, | " | " | " | " | 30 |
| | | | | Drap d'Or, | " | 15 | " | " | " |
| 8 | 16 | | 2 | Royal Hative, | " | 20 | " | Sept. | 5 |
| | | 5 | | Italian Damask, | " | " | " | " | " |
| | | 5 to 6 | | Duane's Purple, | " | 25 | " | " | 10 |
| | | 4 to 5 | 8 to 10 | Washington, | " | " | " | " | " |
| 16 | | 2 to 3 | | Cruger's Scarlet, | " | " | " | " | " |
| | 1 | 1 | 5 to 6 | Green Gage, | " | " | " | " | " |
| | | | | Washington Seedling, | " | " | " | " | " |
| 12 | 9 | 1 | | Lawrence's Favorite, | " | " | " | " | " |
| | | | | Denniston's Superb, | " | " | " | " | " |
| | | | | Ida Green Gage, | " | " | " | " | " |
| 4 | | 2 | 2 | Red Gage, | " | " | " | " | 15 |
| 14 | 10 | 1 | 1 | Purple Gage, | " | " | " | " | " |
| 5 | 5 | 1 | 8 to 10 | Imperial Gage, | " | 27 | " | " | " |
| | | | | Schenectady Catharine, | Sept. | 1 | " | " | " |
| 11 | 8 | 1 | | Bleecker's Gage, | " | " | " | " | " |
| | | 5 to 6 | | Orange, | " | " | " | " | " |
| 9 | | 2 | 2 | Smith's Orleans, | " | " | " | " | 20 |
| 3 | 3 | 1 | | Jefferson, | " | " | " | " | " |
| | 13 | 1 | | Huling's Superb, | " | " | " | " | " |
| | | 6 | | Nectarine, | " | " | " | " | " |
| 20 | | 3 | 8 to 10 | Columbia, | " | " | " | " | " |
| | 18 | 1 | | Red Diaper, | " | " | " | " | " |
| 19 | 11 | 1 | | Purple Favorite, | " | " | " | " | " |
| | | 2 | 1 | *Purple Egg*, | " | " | " | " | " |
| | | 5 | 1 | *Diamond*, | " | " | " | " | 25 |
| 13 | | 6 | 1 | Lombard, | " | 5 | " | " | " |
| | | | | Royale, | " | " | " | " | " |
| | | 2 | | Bingham, | " | " | " | " | " |
| | | 2 to 3 | | Corse's Nota Bene, | " | 10 | " | " | " |
| | | 7 | | Sharp's Emperor, | " | 15 | " | " | 30 |
| | | 1 | | Domine Dull, | " | " | " | " | " |
| | | | 1 | *Semiana*, | " | " | " | Oct. | 5 |
| 1 | 4 | 1 | 1 | Autumn Gage, | " | 20 | " | " | " |
| | | | | Corse's Admiral, | " | " | " | " | " |
| | 17 | | | *Manning's Long* Bl. Pr., | Sept. | 15 | and | Oct. | |
| | | 1 | | St. Catharine, | " | 25 | to | Oct. | 10 |
| | | 1 | | Coe's Golden Drop, | " | " | " | " | 15 |
| 7 | 7 | 1 to 2 | 1 | *Blue Im*peratrice, | Oct. | | | | |
| | | | | Coe's Late Red, | " | and | into | Nov. | |
| 18 | 14 | 2 | 1 | *Frost Gage*, | " | 15 | " | " | " |
| | | | | Ickworth's Imperatrice, | " | | and | | " |

Early Genesee, M'Laughlin, Ida Green Gage, Schenectady Catharine, are new, and of high pretensions; but little known, and some others are not well tested. Coe's Golden Drop is fine, further South. Coe's Late Red, and Ickworth's Imperatrice, are adapted to a warmer climate. For the North, select Early Genesee, Peach, Imperial Ottoman, M'Laughlin, Royal Hative, Green Gage, Red Gage, Smith's Orleans, Lombard, Corse's Nota Bene, Autumn Gage, and Blue Imperatrice for cooking.

We can readily select a dozen excellent kinds for market, but it is difficult to say which one is the best of all.

**Ernst** says, that owing to the destructive attacks of the curculio, but few plums are ever matured there.

**Kirtland** and **Elliott** recommend as the best twelve varieties —

*For Market.* Morocco, Drap d'Or, Imperial Ottoman, Imperial Gage, Flushing Gage, Yellow Gage, Duane's Purple, Smith's Orleans, Washington, Elfrey, Yellow Egg, Coe's Golden Drop.

*For the Garden.* Morocco, Drap d'Or, Imperial Ottoman, Imperial Gage, Purple Favorite, Washington, Red Diaper, Green Gage. As Jefferson, Lawrence's Favorite, and many others, have not been fully tested, we cannot give an opinion as to their merits.

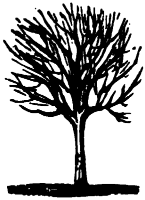
**The Pomological Convention at Buffalo** recommend, as first-rate, Purple Favorite, Red Gage, Washington, Green Gage, Imperial Gage, Jefferson, Bleecker's Gage, Red Diaper, Coe's Golden Drop.

**The National Convention of Fruit Growers** recommend, as first-rate, Jefferson, Green Gage, Washington, Purple Favorite, Purple Gage, Bleecker's Gage, Coe's Golden Drop, Frost Gage. *For Particular Locations*, Imperial Gage.

**Barry** recommends Royal Hative, Green Gage, Imperial Gage, Washington, Jefferson, Lawrence's Favorite, Columbia, Huling's Superb, Duane's Purple, Coe's Golden Drop. Common late Damson for preserves.

**Plums for the North.** **Goodale** recommends for the best 3, Jefferson, Prince's Imperial Gage, Purple Gage; for the best 6, add Washington, Red Diaper, Coe's Golden Drop; for the best 12, add Green Gage, Yellow Gage, Lombard, M'Laughlin, Red Gage, Brevoort's Purple. W. **Goodale**, South Orrington, Me., recommends for the best 3, Jefferson, Green Gage, and M'Laughlin; for the best 6, add Washington, Imperial Gage, and Purple Gage; for the best 12, add Lombard, Bleeker's Gage, Smith's Orleans, Red Gage, Imperial Ottoman, and Magnum Bonum, for preserves. **Pinneo** recommends for the best 3, Early Orleans, Prince's Imperial Gage, Purple Gage; for the best 6, (or 8,) add Duane's Purple, Blue Dwarf Gage, Green Gage, Lombard, Black Damson. For the best 12, add Royal Hative, Washington, Smith's Orleans, Columbia, Jefferson, Orange. We copy this list for the North, from the Horticulturist.

## THE COMMON CHERRY, (*Cerasus vulgaris.*)



The Cherry commonly cultivated in tl country, originated in Asia. It is of g diversity of form, size, age, and ha.. but usually of moderate size, though ge erally of a rapid growth. Of course, it mostly rather short-lived, yet a few att a large size and great age. It varies fr a high, upright, to a low, spreading, a even weeping form. Some varieties a very ornamental, as well as useful. Ma zards, which are natural or seedling trees, are generally t largest and most durable; but usually of poorer fruit.

Uses. The Cherry is generally a very juicy, sweet, de cious fruit, highly valuable from its early appearance in t hot season. Most kinds are admirably adapted to the de sert, and are very cooling and refreshing when fresh fr the tree. Some varieties are acid, and are used in ta and pies; and various kinds are used for preserves, ma malade, jellies, conserves, and as condiments in many dis es. Some are dried and preserved. The wild Black cherr and other similar varieties, are used in the preparation liquors, particularly in those for medicinal purposes. Th astringent quality renders them a valuable tonic, and as cordial, or syrup, they are excellent for the dysentery, chole and jaundice. It is also a valuable stomachic. A cold i fusion of the bark is good for bilious affections. Tl variety is excellent for shade, combining utility and ornamen We have noticed one tree, of superior vigor, and large fru that was 50 feet high and 20 inches diameter at 18 yea old, yielding $10 worth of fruit annually, and as beaut as an elm or other ornamental tree.

Soil and Location. The Cherry will do well on vari soils, from moist to dry; but the best soil is a deep, low loam, of medium moisture, or rather dry. A where Indian corn is not very liable to suffer from drou or wet, is best for the cherry. It bears more moisture the peach, or grape, and requires less than the apple, p or currant.

The cherry is rather delicate. Many of our finest do not succeed far north of this region, and they f in the Southern States. They do best in elevated, tolerably cool locations, as great heat is injurious. The rapid growth of the cherry renders it liable to injury, as the young wood is tender, and the bursting of vessels, from the extremes of heat and cold, in low, warm, locations, causes the gum to ooze out, which is very injurious, or destructive.

PROPAGATION. A few good kinds, true to the parent, are raised from the seed. But the most valuable varieties usually have no meat in the stone. We have planted quarts of stones from nearly all the best varieties, and got only two or three trees. Such will generally be new varieties, possibly superior, but generally inferior, tending to their original wildness. From a quart of Warren's Transparent, a superior, though small cherry, we have 100 fine young trees, which we think, from their appearance, will be true. The valuable varieties are propagated by budding and grafting.

To obtain stocks, take the natural or common Mazzard cherry, which has thin flesh and plump seed, full of meat, well ripened, and let them remain a few days till the flesh will wash off, and leave the stones clean. Then plant. But we prefer putting the stones in loam, and in a box open at top, and with cracks in the bottom to let water through. Put them in the earth, even with the surface, in the shade of a building, tree, or fence, and sow late in fall, or early in spring; or keep in the cellar, as recommended for plum-stones. Sow in a deep, rich, well pulverized soil, tolerably dry, in drills from 1 to 3 feet apart; cultivate well, and the trees will be large enough to set out in the nursery the next spring, and bud in Aug., and in two more years furnish a good sized standard tree. The first fall lay them in by the heels, or if they stand out they are seldom injured, and transplant into nursery rows early, as they start soon. Let the rows be 4 feet apart and the trees 1. Better to cut the trees down half way, cutting just above a shoot, as they will grow far better.

In a forward, wet season, that is becoming dry the latter part of summer, it may be best to bud the very last of July, or first week in Aug. Again, it may be warm and wet till into Sept., and early budding may fail, and late budding, even the first week of Sept., may be successful.

As the birch-like bark of the cherry is apt to curl and open at the bud, the bands, when becoming tight, should be loosened and re-tied.

In grafting the cherry, it is best to put moss around the stock, and tie paper or matting over it, lest the sun start the cement and cause the bark to curl.

We have seen our common cherries growing finely in the little wild Red or Pigeon cherry. They will not flourish in the Black, or Choke cherry; and probably in none that bear fruit in strings, as they are of a different species.

PLANTING, CULTURE, PRUNING, &c. As trees vary materially in their growth, some requiring a distance of 30 feet, others not more than 12 or 15, we prefer planting tolerably near, say a rod, (160 to the acre,) or 21 feet, (100 to the acre,) for the same reasons as recommended on page 150.

Keep the land well cultivated, but not rich, as the cherry is a rapid grower, and a great growth produces tender wood, so that freezing and thawing in winter are destructive. As a remedy, cultivate hardy kinds, and let the land be only moderately fertile, inducing constant and regular growth. Prune but little at the trunk, excepting to remove decaying branches, as the gum will ooze out at the wounds. But prune at the end of the branches, as with the plum and peach. The cherry produces its fruit on wood two or more years old.

Cherries occasionally blast, from heat, even when quite small, owing, mostly, to tenderness from rapid growth; and the foreign varieties are injured by cold in the North. We think our native kinds, which are excellent, will bear extension further north than has been the case with foreign varieties.

*Tan for Manure.* Messrs. A. D. Williams & Son, Roxbury, Ms., most skilful in cultivating fruit, as well as in farming and gardening, invigorate their old and decaying cherry trees, and improve the young, by placing around each large tree a small horse-load of spent tan, fresh from the tannery, every 3 or 4 years. When it is laid around a tree, the fibrous roots penetrate it in every direction, showing that the effect is not merely mechanical, like that of litter, in retaining moisture. The incident of a fine, healthy growth of cherry trees, where some tan was thrown, led to this successful practice. Although we have seen the favorable effects of this application, and have the testimony of so skilful cultivators in its favor, we advise its trial in a small way only, at first, as fresh tan is usually destructive to vegetation.

**Cherries in the South.** Cherries do not succeed at the South — the sun is too hot; plant in cool situations, on northern exposures, on the back-side of buildings, or trees that will shade them in the heat of the day. Bud or graft on native, hardy trees. Shield the trunk and large branches from the sun, by straw, boards, mats, &c. Try various kinds from the North, or where they flourish, and select the hardiest. They fail at Mobile.

**Cherries in the West.** The cherry often fails in the fertile regions of the West, owing, probably, to a too warm climate, to a soil so rich in vegetable mould, that it produces a too luxuriant growth, and to a want of sufficient gravel, sand, and other elements in the soil. Mr. Ernst, of Cincinnati, says to us on this subject, "Our climate is ill adapted to the growth and health of the cherry. The Early Richmond is the only sort, above the common Morello, that flourishes and fruits abundantly in all situations and soils. Here and there a tree of the finer sorts seems to do well. This is owing, doubtless, to some peculiar protection, and perhaps to nourishment in the soil not yet well understood."

**Insects.** The curculio that stings the plum, sometimes punctures the cherry, also. The caterpillar, that is so destructive to the apple tree, is equally injurious to the cherry. The canker-worm occasionally attacks it. But one of the most destructive insects that infest the cherry is the slug. The slug-fly, that lays the eggs, is about ¼ of an inch long, the male smaller, the body glossy black. They generally appear the latter part of May, or first of June, and soon lay their eggs, which are placed in little semi-circular incisions in the leaf, and usually on the under side. The slugs appear from the first of June to the latter part of July. They are first white, but soon covered with a sticky coat. They are about half an inch long. They will soon destroy the foliage, the fruit fails, the tree is checked, and finally fails. if infested annually. The slugs come to their growth in 26 days, bury 1 to 4 inches in the ground, form cocoons in the earth, change to chrysalides, and in 16 days from their descent, they rise and lay eggs for a second brood, which do not complete their transformations until the next spring.

*Cherry-Slug.*

*Remedy.* Dust the foliage, thoroughly, with dry wood-ashes, or fresh slacked lime, when the dew is on. These adhere to the slimy slugs, and are sure.

The black aphis appears early in summer, and by strict attention in killing all, with the fingers, on their first appearance, a numerous and destructive host may be prevented. Perhaps whale-oil soap, or strong soap-suds and tobacco-water, may kill them; but the fingers are sure.

Classification. Some authors make four classes, dividing the heart-shaped, or nearly heart-shaped, sweet cherries, into *Bigarreaus*, of firm flesh, and *Hearts*, of tender flesh; and the round, or flattish acid cherries, into *Dukes*, of subacid quality, and *Morellos*, of acid quality. These distinctions are too nice for common observers, and nature acknowledges no such lines of demarkation, as there are almost imperceptible gradations from the texture of the tenderest *Heart* to the firmest *Bigarreau;* and from the mildest *Duke* to the most acid *Morello.*

We make only two classes, in which the distinctions are more natural and easy; yet, in some cases, a variety seems to belong to one class by its tree, and to another by its fruit. In new varieties, produced by a mixture of different classes, the characteristics of various kinds, both in tree and fruit, become blended, so as to belong, exclusively, to no class, but partially to several; so each variety must be described according to its own peculiarities.

Class 1. *Hearts* and *Bigarreaus.* Rapid and lofty growers, with large and pendent leaves, and sweet, heart-shaped, or nearly heart-shaped, fruit.

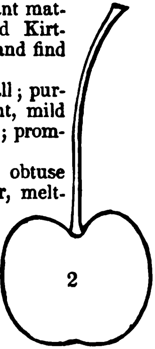
Class 2. *Dukes* and *Morellos.* Slow growers, forming low, spreading trees; dark-colored shoots; dark green, narrow foliage; and round, tender, and acid, or sub-acid fruit.

Varieties are now so numerous, that we have this delicious fruit, of excellent quality, for the space of two months, from the 1st or 2d week in June, (in N. England,) according to the season, to the same time in Aug., and some cooking varieties continue much later. Nearly all our excellent kinds were of foreign origin a few years since, but now we have almost a complete assortment of natives, that rank among the highest. Nothing excels the Honey Heart, Sumner's Honey, Coe's Transparent, Downer's Late, Sweet Montmorency, Manning's Late Black, and some of Kirtland's Seedlings.

From hundreds of seedlings, which he raised from the best varieties, Prof. Kirtland selected seven highly valuable kinds, which he placed at the disposition of Mr. F. R. Elliot, who figured and described them in the Horticulturist, from which we copy, adding other important matter direct from him. To these we add Kirtland. We have recently obtained them, and find them very promising in the nursery.

1. EARLY PURPLE GUIGNE. Rather small; purple; tender, juicy, sweet, with a pleasant, mild flavor. June 5 to 20. Recently imported; promising. Class 1.

2. MAY DUKE, *Early Duke*. Medial; obtuse heart-shaped; very dark red; flesh tender, melting, juicy, slightly acid, but at full maturity rich and excellent. 15th to last of June. Answers to cook early, and is long in use. A week earlier than Black Tartarian. Tree of moderate growth, large, spreading, a great bearer. One of the best early cherries, suited to various climates and soils. It endures the climate of the North as far as Maine. Fruit middling hardy. In this region are large trees 40 or 50 years old. Foreign. Class 2. (*Outline* 2.)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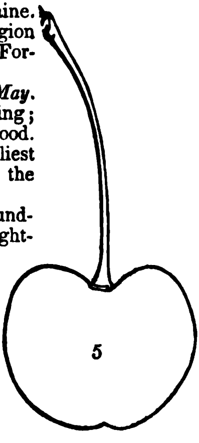
3. BIGARREAU DE MAI, *Baumann's May*. Small; oval; dark-red; stem middling; tender, juicy, tolerably sweet and good. June 5 to 20. A great bearer. Earliest of cherries, and as it ripens alone the birds eat them. Foreign. Class 1.

4. THE DOCTOR. Rather small; roundish heart-shaped, distinct suture; bright-yellow and red, beautifully blended and mottled; stalk medial; flesh white, tender, juicy, with a sweet and delightful flavor. Second week in June. Moderate growth, spreading, very productive. Good for the private garden. Class 1. *Kirtland*.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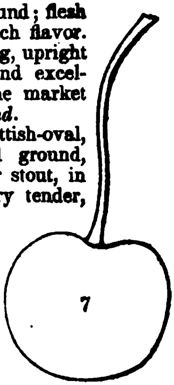
5. ROCKPORT BIGARREAU. Very large; roundish, heart-shaped;

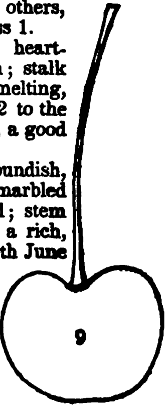

7

beautiful clear deep-red, on amber ground; flesh yellowish, firm, juicy, with a sweet, rich flavor. Ripens from 20 to last of June. Strong, upright growth. As it is large, handsome, and excellent, it is highly valuable both for the market and private garden. Class 1. *Kirtland.*

6. **Ohio Beauty.** Very large; flattish-oval, heart-shaped; dark-red on pale-red ground, somewhat marbled; stalk long, rather stout, in a deep, open cavity; flesh white, very tender, delicate, juicy, with a fine flavor. Middle to 20 June. Beautiful and excellent. Class 1. *Kirtland.*

7. **Coe's Transparent.** Medial; round; skin thin, pale-amber and red; stalk rather short, in a moderate depression; tender, melting, delicate, of a sweet, fine flavor. June 20 to July 10. Origin, garden of Mr. Curtis Coe, Middletown, Ct. The tree of vigorous, upright growth, and productive. Like many others, rather liable to rot in wet weather. Class 1.

8. **Early White Heart.** Medial; heart-shaped; whitish-yellow, red in the sun; stalk long and slim; flesh rather tender, melting, juicy, sweet, and very pleasant. Ripe 12 to the last of June. Tree very hardy, vigorous, a good bearer. Class 1.


9

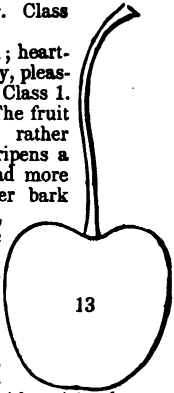
9. **Sumner's Honey.** Medial; roundish, heart-shaped; amber, half covered and marbled with pale red, very delicate and beautiful; stem medial; flesh a little firm, tender, with a rich, sweet, delicious flavor. Ripe from the 20th June to 4th July. About half way between May Duke and Black Tartarean. Hardy in tree and fruit, a vigorous grower, and good bearer. Origin, by Gen. Clement Sumner, Dorchester, Ms. Very promising. Class 1.

10. **Knight's Early Black.** Large; obtuse heart-shaped; purplish-black; stalk short, thick; flesh deep-purple, firm, juicy, rich, and sweet. Tree spreading. In size, color, and flavor, it nearly resembles the

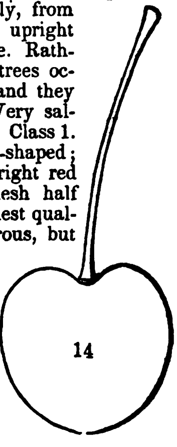
Black Tartarean, but is a little earlier. Class 1.

11. Bowyer's Early Heart. Medial; heart-shaped; pale-yellow and red; tender, juicy, pleasant, sweet. Middle of June. Foreign. Class 1.

12. Davenport, *Davenport's Early*. The fruit nearly like the Black Tartarean, but rather more obtuse at the apex, more watery, ripens a few days earlier; the tree is lower and more spreading; the leaves larger; the outer bark resembles birch. Downing, and others, who say the Davenport resembles the Black Heart, must have another kind in view, for we have searched it up in the Davenport family, in Dorchester, the place of its origin. Class 1.


13

13. Black Tartarean, *Double Heart*, formerly, in N. England. Very large; heart-shaped; skin glossy, purplish-black; flesh purple, half tender, juicy, with a rich, pleasant flavor. Stone small. Ripens, generally, from June 23 to July 4th. A very vigorous, upright grower, and great bearer. Leaves large. Rather tender for the cold region. The trees occasionally crack, the gum oozes out, and they decline. The fruit middling hardy. Very salable from its large size. Origin, Russia. Class 1.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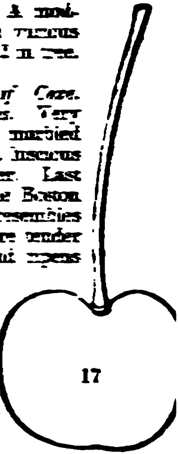
14. Elton. Very large; acute heart-shaped; skin thin, pale-yellow, mottled with bright red in the sun; stem long and slender; flesh half tender, juicy, rich, luscious, of the highest quality. Latter part of June. Tree vigorous, but moderate bearer. Foreign. Some say this is identical with Flesh-colored Bigarreau; but though similar in shape, it is of a lighter color, and finer quality. Mr. Haggerston, a skilful horticulturist, particularly in foreign fruits, says they are distinct. Class 1.

15. Belle de Choisey. Medial size; roundish; pale-amber, mottled with yellowish-red in the sun; transparent; stalk short; flesh amber, very tender, melting, with a sweet,

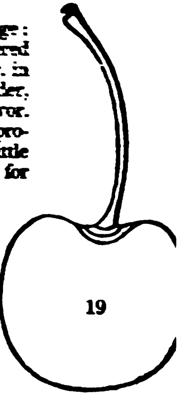
delicious flavor. 20 to last of June. A moderate grower and bearer. Adapted to various soils and climates. Foreign. Class 1 in tree, 1 in quality of fruit.

16. WHITE BIGARREAU. *Bigarreau of Coxe. White Bigarreau of the Middle States.* Very large, heart-shaped, yellowish-white, marbled with red; flesh rather tender, of a fine, luscious flavor. Apt to crack in wet weather. Last week in June. Very common in the Boston market, under various names. It resembles the Bigarreau, but is less hardy, more tender flesh, has narrow curved leaves, and ripens earlier. Not worth cultivating. The tree rather tender. Class 1.


17

17. DOWNTON. Large, roundish; obtuse heart-shaped; pale cream color, stained and marbled with red; semi-transparent; stalk rather long, slender, in a large cavity; flesh yellowish, tender, slightly adhering to the stone, with a rich and very delicious flavor. Latter part of June, with Black Tartarean. Hardy, even in Maine. Class 1.

18. AMERICAN HEART. Rather large; heart-shaped; light amber, nearly covered with light red; stem long and slender, in a shallow cavity; flesh tolerably tender, very juicy, sweet and excellent flavor. June [illegible] to [illegible] of July. Vigorous and productive, bearing in clusters. But little cultivated in N. England. Valuable for the market. Class 1.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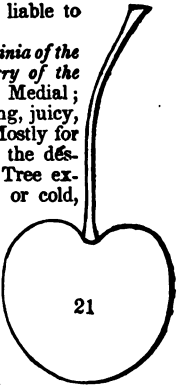
19. CLEVELAND BIGARREAU. Extremely large; roundish, heart-shaped, with a broad, deep suture; clear, bright, delicate red on amber-yellow ground; stalk rather short, middling stout, curved; flesh pale yellowish-white, firm, juicy, of a sweet, rich flavor. Ripens with Black Tartarean. It resembles the Bigarreau in tree and fruit, but is a greater

nd (from 4 years' trial) not liable to ss 1. *Kirtland.*

ENTISH, *Early Richmond and Virginia of the* ns, *Common Red and Pie Cherry of the* , *Montmorency of the French.* Medial; bright, darkish-red; flesh melting, juicy, sprightly, rich, acid flavor. Mostly for ; but when very ripe, good for the des- atter part of June into July. Tree ex- hardy in various climates, hot or cold, s and productive. Class 2.

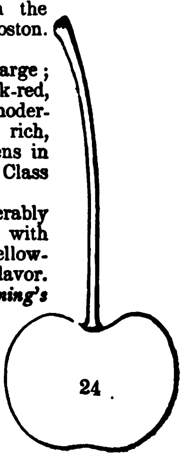
ICHARDSON. Very large; heart- but rather short, and tapering o the point; very dark-red, in- to black; stem rather short and Flesh deep-red, half tender, charine, rich, luscious flavor. June and first of July. It vell on or off the tree. Good and bearer, rather upright, hardy in tree and fruit. l tree, as far as known, in the of J. R. Richardson, Esq., Boston.


21

KIRTLAND'S MARY. Very large; h, heart-shaped; light and dark-red, l, on a yellow ground; stalk moder- ; flesh light-yellow, half tender, rich, ith a sweet, high flavor. Ripens in season. Of excellent quality. Class *tland.*

DOWNING'S RED CHEEK. Tolerably obtuse, heart-shaped; white, with k-crimson in the sun; flesh yellow- tender, of a sweet, luscious flavor. ys before Bigarreau. *Downing's* Class 1.

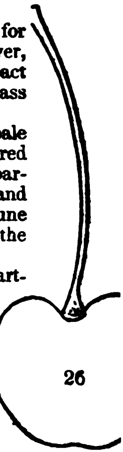
LACK EAGLE. Tolerably large; heart-shaped; purplish-black; edial length, rather slender; ep-purple, rather tender, with est and finest flavor. A stand- excellence. Ripens the last , a few days later than the


24

Black Tartarean. Hardy, and suitable for the North; a good bearer, a good grower, rather spreading, forming a round, compact head. Leaves large. English origin. Class 1.

25. **Elliott's Favorite.** Rather small; pale amber-yellow, with a bright crimson-red cheek, marbled; flesh pale amber, transparent, tender, exceedingly delicate, juicy, and sweet, with a fine high flavor. Last of June to July 10. Very delicious. Fine for the private garden. Class 1. *Kirtland.*

26. **Black Heart.** Large medial; heart-shaped; glossy, dark, purplish-black; stalk tolerably long, slender; flesh dark-purple, tender, juicy, with a sweet, rich flavor. June 25 to 5 or 10 of July. Hardy in tree, a vigorous grower, forming a large and durable tree. Suited to the North, even as far as Bangor, Me. Class 1.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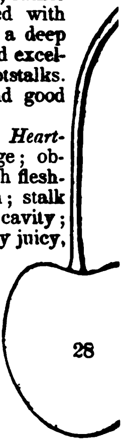
27. **Holland Bigarreau.** Very large; rather acute heart-shaped; pale-yellow, mottled with red in the sun; stalk long, slender, in a deep cavity; flesh rather firm, juicy, sweet and excellent. Leaves large, broad, light footstalks. First week in July. Tree vigorous and good bearer. Fruit beautiful. Class 1.

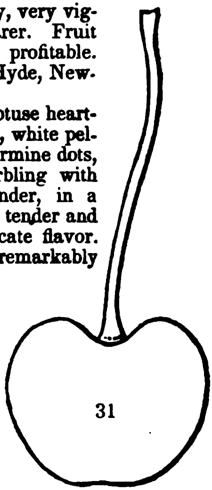
28. **Flesh-colored Bigarreau,** *Large, Heart-shaped Bigarreau of Manning.* Very large; oblong, rather acute heart-shaped; yellowish flesh-color, marbled with bright red in the sun; stalk moderate length, slim, in a narrow, deep cavity; flesh nearly tender at full maturity, very juicy, sweet, pleasant flavor. A few days earlier than Bigarreau, and more profitable for market, being less liable to rot; superior to Napoleon Bigarreau, as a better bearer. French origin. Class 1.


28

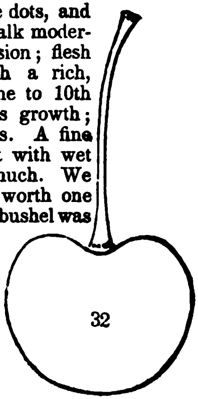
29. **Hyde's Seedling.** Tolerably large; heart-shaped; pale-yellow, mostly pale-red in the sun; stem rather short; flesh half firm, tender, very juicy, with a pleasant, sprightly flavor. Ripe first of

ith Bigarreau. Tree hardy, very vig- spreading, prodigious bearer. Fruit y hardy. One of the most profitable. ted, recently, by S. & G. Hyde, New- lass 1.

**URR'S SEEDLING.** Large; obtuse heart- ; distinct suture; skin thin, white pel- ı the shade, spotted with carmine dots, illiant red in the sun, marbling with red; stalk long and slender, in a shallow cavity; flesh white, tender and rith a smart, lively and delicate flavor. ) the 10th July. Growth remarkably and vigorous. W. R. Macedon, N. Y., in Horti- t. Raised by Zera Burr, n. Class 1.


31

**IGARREAU,** *Yellow Span- Vhite Bigarreau of Man- nd Kenrick, White Tar- (incorrectly) by many fruit- in N. England.* Very obtuse heart-shaped; lattened at the base; pale, -yellow, with minute carmine dots, and ıg of bright red in the sun; stalk moder- gth, stout, in a wide depression; flesh llow, quite firm, juicy, with a rich, delicious flavor. Last of June to 10th . Tree hardy, with vigorous growth; bearer. Large, broad leaves. A fine cherry in a good season, but with wet r when it is ripening, it rots much. We en a tree that produced $15 worth one ıually full the next, but not a bushel was ıe market. Foreign. Class 1.


32

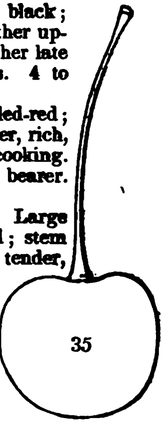
**FLORENCE.** Large; obtuse ıaped; amber-yellow, mar- ith red, bright-red fruit in the tem moderate length, slender; ellowish, firm, juicy, sweet, ellent. Hangs on long. June ıly 20. Class 1.

20*

33. Apple. *Gridley*. Medial; roundish; black; flesh purple, juicy, pleasant flavor. Rather upright, rapid grower and great bearer. Other late kinds are better. Origin, Roxbury, Ms. 4 to 12 July. Class 1.

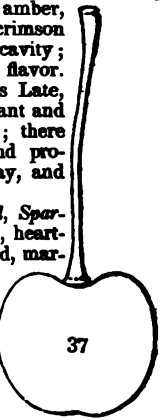
34. Carnation. Bright, shining, marbled-red; round; stalk short and stout; flesh tender, rich, sub-acid flavor. One of the best for cooking. Last of July. Tree low growing, good bearer. Class 1.

35. Manning's Late Black Heart. Large medial; roundish heart-shaped; dark-red; stem long, middle size; flesh bright-red, half tender, rather juicy, spirited, with a pleasant, luscious flavor. Ripens 1 to 10 of July, with Honey Heart. We have noticed the original tree at Salem; it is hardy, very vigorous, large and beautiful, from its immense foliage, which screens the fruit from the birds. Great bearer, and the fruit pretty hardy. Class 1.



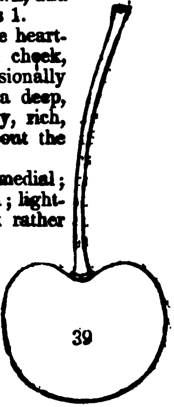
36. Napoleon Bigarreau. Very large; rather oblong heart-shaped; pale-yellow, inclining to amber, spotted with deep-red, and marbled with crimson in the sun; stalk short, stout, in a narrow cavity; flesh very firm, juicy, with an excellent flavor. The former part of July, with Downer's Late, and Honey Heart. The growth is luxuriant and beautiful. A moderate bearer, generally; there are exceptions, Kirtland says, hardy and productive, but fruit slightly inclined to decay, and little deficient in richness. Class 1.

37. Honey Heart, *Rodger's Pale Red*, *Sparhawk's*, *Honey*. Medial; flattish-roundish, heart-shaped; skin thin, glossy, bright amber-red, marbled, blotched, and specked with pale-yellow; stalk moderate length, slender; flesh yellowish, very tender, melting, very juicy, with a pure, sweet, and most delicious flavor. One of the very best. Stone large. 1 to 12 July, with the Downer. Tree hardy, vigorous, and productive. Doubtless a native. Capt.



e, of Newton, found it in that town, and
nated it a long time since. Class 1.

**ATE BIGARREAU.** Large; obtuse heart-
rich yellow ground, with red cheek,
nearly all red, occasionally
d; stalk medial, in a deep,
vity: yellowish, firm, juicy, rich,
ble flavor; pit small. About the
Class 1. Kirtland.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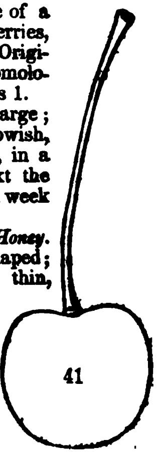
*Downer's Late.* Large medial;
slightly heart-shaped; light-
with yellow; stalk rather
; flesh very tender,
, sweetish, with a very
peculiar to some Mazzards,
luscious flavor. Fourth to
of July. Tree remarkably
vigorous, a great and sure
d the fruit the hardiest of all
the rot, which often destroys
s of tender fruit. We
ripening fine at the close of a
wet weather, when most cherries,
some cases all others, rotted. Origi-
S. Downer, Esq., a veteran pomolo-
Dorchester, in this vicinity. Class 1.

**ARGE RED BIGARREAU.** Very large;
eart-shaped, distinct suture; yellowish,
l, dark-red in the sun; stalk large, in a
vity; flesh yellowish, reddish next the
m, of a rich, fine flavor. Second week
Tree vigorous. Class 1.


41

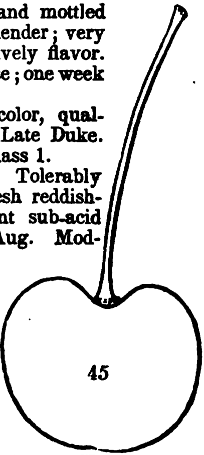
**MERICAN AMBER,** *Bloodgood's Honey.*
roundish, inclining to heart-shaped;
indented at the point; skin thin,
mber. mottled with bright red;
der, in a slight cavity;
olor, tender, sweet, very
t, but not high flavor.
uly 5 to 15. Great bearer.
by Daniel Bloodgood, Flush-
I. Class 1.

**LATE HONEY.** Large medial;

heart-shaped; bright-red, specked and mottled with yellow; stem 2 inches long, slender; very tender, melting, juicy, of a sweet, lively flavor. Similar to Honey Heart in appearance; one week later. Class 1.

43. LEMERCIER. In size, form, color, quality, and time, nearly the same as Late Duke. Messrs. Hovey have this fruit. Class 1.

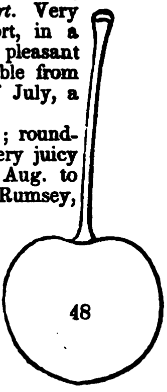
44. ENGLISH MORELLO, *Morello*. Tolerably large; roundish; nearly black; flesh reddish-purple, tender, juicy, of a pleasant sub-acid flavor. Last of July and first of Aug. Moderate growth. Class 2.



45. LATE DUKE. Large; obtuse heart-shaped; dark-red; flesh yellowish, tender, juicy, with sprightly, rich, acid flavor. Excellent for cooking and for the dessert. Ripens latter part of July, and continues 3 or 4 weeks. Vigorous and good bearer. Does well in light soils. Class 2.

46. ELKHORN, *Tradescant's Black Heart.* Very large; heart-shaped; black; stem short, in a deep cavity; flesh very firm, tough, of pleasant flavor, though not first-rate; it is salable from its large size and lateness. Middle of July, a week after Honey Heart. Class 1.

47. RUMSEY'S LATE MORELLO. Large; roundish, heart-shaped; rich, lively, red; very juicy and melting, but very acid. Last of Aug. to Oct. Lately originated by Dr. J. S. Rumsey, Fishkill Landing, N. Y. Class 2.



48. PLUMSTONE MORELLO. Large; roundish, and slightly heart-shaped; deep-red, stalk moderate length, slender; flesh reddish, tender, juicy, of a pleasant, acid flavor. One of the best for cooking. First of Aug. Vigorous and productive. Class 2.

49. WENDELL'S MOTTLED BIGARREAU. Large; obtuse heart-shaped; purplish-red and mottled; stalk medial; flesh firm, crisp, juicy, high flavored. Ripens

with Downer. Origin, garden of Dr. H. Wendell, Albany, N. Y. New. Class 1.

50. HYDE'S LATE BLACK. Medial; obtuse heart-shaped, purplish-black; flesh half firm, melting, juicy, luscious. July 10 to 20. Resembles Black Eagle, but is later. By Messrs. Hyde, Newton, Ms.

51. BLACK BIGARREAU OF SAVOY. Large; heart-shaped; black; flesh purple, very firm, rather rich and pleasant, but not juicy. Pit large. Keeps long, on or off the tree. July 10 to 20. Foreign. Class 1.

52. BELLE MAGNIFIQUE. Large; round; light-red, mottled with dark-red; stalk rather long; flesh juicy, rather acid. First rate for cooking and preserving, and well ripened pretty good for the dessert. Moderate grower, good bearer. Adapted to northern culture. Last of July. Class 2.

53. WARREN'S TRANSPARENT. Small; roundish, heart-shaped; pale-yellow and red; flesh very tender and delicious. The stone is seen through the fruit. Ripe July 15 to 25. Small, but valuable for its lateness and fine quality. Vigorous and hardy. The pit full of meat. J. L. L. F. Warren, Brighton, Ms. Class 1.

54. SWEET MONTMORENCY, *Allen's Sweet Montmorency*. Rather small; roundish; bright-red, partially mottled; very sweet and luscious. Last week in July and first in Aug. Keeps well, on or off the tree. Good grower and bearer. Raised by J. F. Allen Esq., Salem, Ms. Class 1.

55. LATE KENTISH, *Pie Cherry*. Medial; roundish; deep-red; very tender, juicy, and quite acid, even in perfection. Very hardy, and the seeds produce the same. First of Aug. Native. Class 2.

ORNAMENTAL VARIETIES. *Large Double Flowering* is a beautiful tree, with a profusion of large flowers, resembling white roses. It bears no fruit, but the tree is large and lofty. *Dwarf Double Flowering* has similar flowers, but not so beautiful; it is only a shrub. *Chinese Double Flowering* is dwarfish; has beautiful, white, double flowers, tinged with pink. *Wild Black*, under high culture, forms a beautiful, vigorous tree, and the fruit is valuable for medicine. *Weeping* or *Allsaints*, is small, slender, and weeping; with fine, delicate leaves, and small, acid fruit.

| Market. | Home use. | Quality. | Hardiness. | TABLE OF CHERRIES, In order of ripening. (See page 11.) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Bigarreau de Mai, . | June | 5 | to | | 20 |
| | | | | Early Purple Guigne, | " | " | " | | " |
| | 3 | 1 | | Doctor, . . . . . . | " | 10 | " | | 25 |
| | | 5 | 6 to 7 | Early White Heart, | " | " | " | | 30 |
| 3 | | 5 to 6 | 5 to 6 | *May* Duke, . . . . | " | 15 | " | | " |
| 12 | | | | Ohio Beauty, . . . | " | " | " | | " |
| | | | | Knight's Early Black, | " | " | " | | " |
| | | 3 | | Davenport, . . . . | " | 20 | " | July | 1 |
| 8 | 2 | | | Rockport Bigarreau, | " | " | " | | " |
| 20 | | | | American Heart, . | " | " | " | | " |
| | | 1 | | Belle de Choisy, . | " | " | " | | " |
| 9 | 5 | 1 | | Coe's Transparent, | " | " | into | July | |
| | 8 | 1 | 2 to 3 | Sumner's Honey, . | " | " | " | " | |
| 2 | 14 | 2 | 5 to 6 | Black Tartarean, . | " | 23 | " | " | 4 |
| 17 | 13 | 1 | 4 to 5 | Elton, . . . . . . . | " | " | " | " | " |
| | | | | Downton, . . . . | " | " | " | " | " |
| 4 | | | | Cleveland Bigarre. | " | " | " | " | " |
| | | | | *Kent*ish, . . . . . | " | " | " | " | " |
| 13 | 12 | 1 | 2 to 3 | Richardson, . . . | " | 25 | to | July | 8 |
| | 15 | 1 | | Kirtland's Mary, . | " | " | " | " | " |
| 6 | 4 | 1 | 2 to 3 | Black Eagle, . . . | " | " | " | " | " |
| 18 | | 3 | 3 to 5 | Flesh-colored Bigar. | " | " | " | " | " |
| | | 2 to 3 | 5 | Black Heart, . . . | " | 27 | " | July | 8 |
| | | | 10 | Bigarreau, . . . . | " | " | " | " | 10 |
| | | | | Elliott's Favorite, . | " | " | " | " | " |
| | | | | Holland Bigarreau, | " | " | " | " | " |
| 15 | | | 5 | Hyde's Seedling, . | " | " | " | " | " |
| | | | | Florence, . . . . | " | " | " | " | " |
| | | | 3 | Burr's Seedling, . | J'ly | 1 | to | J'ly | 12 |
| 5 | 9 | 2 | 4 | Manning's L. Black, | " | " | " | " | " |
| | | | 2 to 3 | Napoleon Bigar. . | " | " | " | " | " |
| 10 | 1 | 1 | 3 | Honey Heart, . . | " | " | " | " | " |
| 1 | 6 | 1½ | 1 | Downer, . . . . . | " | " | " | " | " |
| 16 | | | | Late Bigarreau, . . | " | " | " | " | " |
| | | | | American Amber, . | " | 5 | " | " | 15 |
| 19 | | 3 | | Late Honey, . . . | " | " | " | " | " |
| | | | | Wendell's Motl'd Big. | " | 10 | " | " | 20 |
| | 10 | 1 | 2 to 3 | Hyde's Late Black, | " | " | " | " | 25 |
| | | 4 | 5 to 6 | Elkhorn, . . . . . | " | " | " | " | " |
| | | 1 | | Warren's Transpar't, | 15 | " | " | " | " |
| 7 | | 5 to 6 | | *Late* Duke, . . . . | " | 20 | | Aug. | 10 |
| 14 | 7 | 1½ | | Sweet Montmorency, | " | 25 | " | " | 5 |
| 11 | 11 | | | *Belle Magnifique*, . | " | " | " | " | " |
| | | | 2 to 3 | *Plumstone Morello*, | " | " | " | " | " |

Doctor, Ohio Beauty, Rockport Bigarreau, Coe's Transparent, Sumner's Honey, Cleveland Bigarreau, Richardson, Kirtland's Many, Late Bigarreau, Wendell's Mottled Bigarreau, Hyde's Late Black, and other kinds, are new and very promising, but not generally tested. The fruit is fine, and they are native hardy varieties that bid fair to rank high.

Kirtland and Elliott (pages 227, 8) recommend,

*For the Private Garden.*

1. Doctor.
2. Rockport Bigarreau.
3. Kirtland's Mary.
4. Knight's Early Black.
5. Elton.
6. Holland Bigarreau.
7. Black Eagle.
8. Belle de Choisy.
9. Elliott's Favorite.
10. Delicate, (*new,—not described.*)
11. Late Bigarreau.
12. Downer's Late Red.

The best No. 2. Best three, 2, 4, 6. Best six, add 3, 10, 11.

*For Market.*

1. No. 29, Kirtland's Seedlings.
2. Rockport Bigarreau.
3. Cleveland Bigarreau.
4. American Heart.
5. Ohio Beauty.
6. English Amber.
7. Late Bigarreau.
8. Holland Bigarreau.
9. Downer's Late Red (Downer.)
10. Black Tartarean.
11. Early Richmond (Kentish.)
12. Napoleon, (Napoleon Bigarreau, Ed.)

4 choice kinds at different periods, 1, 3, 4, 7.

Downing, in his Horticulturist, 1846, recommended the 12 following *Choice Hardy Cherries*, for the Middle States. Black Tartarean, Black Eagle, Early White Heart, Downton, Downer's Late, Manning's Mottled, Flesh-Colored Bigarreau, Elton, Belle de Choisy, May Duke, Kentish, Knight's Early Black.

The National Convention of Fruit Growers recommend as first rate, May Duke, Black Tartarean, Black Eagle, Bigarreau, Knight's Early Black, Downer, Elton, Downton.

Barry recommends for a succession from June to August, May Bigarreau, or Beauman's May, Knight's Early Black, May Duke, Black Tartarean, Elton, Napoleon Bigarreau, Belle de Choisy, Sparhawk's Honey Bigarreau or Yellow Spanish, Black Eagle, Downer's Late, Carnation, Belle Magnifique, Large English Morello. The three last are fine late tart cherries, for cooking, and with the May Duke and Belle de Choisy are of slower growth, and form small sized trees; the others are all rapid growers, and form handsome pyramidal shaped trees.

Cherries for the North. Goodale says that the only cherries which prove hardy and good with him, are the Downton, Downer, Elton, Black Eagle and May Duke. Pinneo says that the Kentish is hardy, Black Heart, Black Tartarean, Hyde's Seedling, Downer, and May Duke, do pretty well.

## THE GRAPE, (*Vitis.*)

The Grape was one of the first fruits that claimed the attention of man, and now, where it receives due care, in a climate adapted to its culture, it ranks among the finest fruits. The grapes cultivated so extensively in Europe were originally from Asia. In 1830, France produced 14,000,000,000 pounds of grapes, which indicates a genial clime, though far from its native home. This fruit is admirably adapted to small premises. From very little land, and that used also for various other purposes, with trifling care, and that care a pleasure, a family may have a liberal supply of luscious grapes. Excepting in compact cities, there is scarcely a dwelling where this luxury may not be enjoyed fresh from the vine.

Uses. The grape, like the melon, is cooling and refreshing in warm weather; hence the importance of cultivating early kinds, especially in the North, for we do not relish refrigerant fruits,

> "When November comes with looks of woe,
> And thin locks fleckered o'er with snow."

This fruit is among the most delicious, and it has a very salutary effect on the system, being both nutritious and medicinal. It attenuates the blood, and gives it a free circulation, delighting the young and renovating the old. Taken freely, it is diuretic and laxative. It has often proved effectual in severe cases of dysentery, even curing whole armies. In inflammatory complaints, it allays thirst and reduces heat. It is also useful in phthisical and pulmonary disorders. Dried grapes or raisins are used very extensively. They are good for the dessert and in various ways of cooking. The pure wine of the grape is, in some cases, highly valuable for its salutary and remedial effects; but, like many other blessings, liable to be perverted. He that is whole needs not a physician.

The grape is naturally the wine-producing fruit, those that are well adapted to this purpose being alone sufficient. In Cincinnati and vicinity, 23,000 gallons of wine were made in 1845, mostly from the Catawba, and the vineyards were extending. Domestic wines are superior to imported, as alcohol is added to the foreign to preserve them, and poisonous substances to correct their acidity.

AND LOCATION. The soil should be light, deep, rich,
dry, with a good share of gravel or sand, and a dry
l: and for wine, a calcareous soil should be chosen,
should be freely added. The wine-dressers of Ohio
cular on this point. Any land naturally well adapt-
ian corn, and put in good condition for a crop, will
d grapes. Some varieties will grow where it is tol-
wet, but generally the crop is surer and better on a
il.

t grapes adapted to the climate will flourish in almost
cation, but hill-sides and moderate elevations are pref-
A warm, sheltered location, or southern exposure,
n desirable to bring a late variety to maturity. On
nds the extremes of heat and cold are greater, and
e injurious, but much depends on the kind. On the
mountains and high hills, storms and winds are un-
ble. In a hot climate, use a northern exposure for
kinds that flourish better further north. Longworth
a northern exposure, not only for the advantages of
tion, but because the land is richer. If convenient,
a near exposure to the sea. On steep hill-sides, ter-
f stone or sods should be formed.

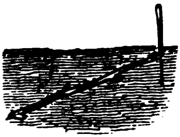
PAGATION. New varieties are produced by seed; and
le kinds are propagated by layers, cuttings, and by
g.

l. The greater the number of kinds cultivated to-
, the more varieties they produce from seed. By cross-
ation, (page 65,) a hybrid between any two varieties
e produced. A late grape may be improved by a cross
n early one, a small with a large, &c., &c. Clean the
y washing, and plant in fall, or put in sand, as other
and plant in spring, in a rich, mellow soil. In fall, the
ear, heap the earth up around the tender vines, or take
p and bury in light soil, the same as trees are laid in
heels, (page 49,) only cover all over. At one or two
old, set out as standards.

*ers.* This is the surest mode, and brings forward
and fruit the soonest. We have had fine fruit, and a
growth of vine, the second year, from layers. Layers
wood may be made in spring or early in June; of
ood, in June or early in July. Good layers will be fit
as standards after one season's growth; those that are
or were made late, and are not well rooted, may be

saved from winter as young seedlings, and set out t one year more in the nursery, or, with due care, plant permanently. (Pages 31, 49.)

*Cuttings* admit of rapid multiplication. They cut late in fall or early in winter, and buried in a In spring, cut off each end close to a bud, leaving about a foot long, and plant deep, rich, moist soil, partially if convenient, with the top bud one half inch in soil, with a littl by it that the place may be know the earth loosened over the bud i 15 days. This is surer than to the end out to dry. In fall, cut to 2 or 3 eyes, and bury up in or lay in as seedlings. (Page 144.) They need 2 growth to be fit for setting as standards. Some native are hard to start from cuttings. Propagate such by la

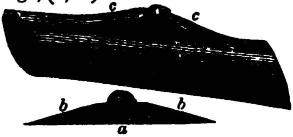


*A Cutting planted.*

*Grafting.* Some graft with success early in spring, the vines bleed, or the bleeding may be partially s with cement. To prevent bleeding, and to allow the become thick, which is an aid to success, wait till the are developed. Remove the earth around the vine, a it off 2 or 3 inches below the surface, insert the scion other cleft grafting. Apply cement, replace the eart covering the lower bud of the scion, and leaving upper bud, two being sufficient. If the stock be ver insert the scion into a gimlet hole, as a spile. the stump be an inch in diameter, put in two scions. well set in vigorous stocks, generally grow freely, an the next year. Some splicegraft above the ground scions use common cuttings, of the last year's grow wood of which was well ripened or firm in the fall. soft wood at or near the top of the vine should be re They may be kept as cuttings, or saved in the same n as scions generally. Page 34. The surest and leas blesome way is to bury them 6 to 10 inches deep, a as cut from the vines.

Dr. Eastburn Sanborn, Andover, Ms., has various nious and valuable modes of budding and grafting. I grape, he cuts out a bud with a small portion of wood same side only, which he makes into the form of a inserts as in cleft grafting.

*Budding*. Dr. S. buds the grape, by cutting a bud out of the scion, nearly an inch long, straight on the side opposite the bud, (*a*,) and cut off at each end, on the bud side, to an edge, (*b*, *b*.) The wood on the stock is raised by cutting up and down the vine, and the bud is nicely fitted, the raised wood (*c*, *c*) covering the part where the bud-piece was shaved off. This is done in spring, after the vine has nearly leaved out, and in the summer.*



Culture and Manure. After preparing the land by deep ploughing, and a well-manured crop that tends to the pulverization of the soil, subsoil, trench-plough, or trench with the spade, 20 inches deep, placing much of the surface soil at the bottom. Subsoiling is not so good as the other processes, as it only loosens the subsoil, without removing or mixing it much with the upper layer.

After the vines are planted, the soil should be kept loose by frequent stirring, and all grass and weeds destroyed. At first, stir freely and deeply near the plants, but as the roots extend, be careful and not disturb them, but still stir lightly above them, and deep around them, making a fine bed inviting their extension. Longworth ploughs in his vineyards, but soon discontinues ploughing as the roots become extended. Mulching (page 50) is excellent, especially in hot, dry weather. It has doubled the crop, and prevented mildew.

Common animal manures are good as a preparation of the land, or for young vines; but for bearing vines, compost the animal manure, as the irregular and rapid growth, from sudden decomposition of manure, injures the grape, producing blight, rot, &c. Ashes alone are a good manure. Cinders from the blacksmith's forge are excellent. Soap-suds are a good liquid manure; so are sink water and urine, and better to mix all and let them ferment. Bone manure is one of the best for grapes. Apply it moderately if it be fine, but liberally in whole bones or large pieces, as it will decompose slowly. The best manure is leaves and trimmings of vines, buried around the roots. The analysis will aid the cultivator.

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* NOTE. When Dr. S. gave us an account of these modes, his scions were very flourishing; but in answer to recent inquiries, he says that some failed from the heat of summer. Therefore we present the subject for trial only, hoping it will aid others in experiments. Some have succeeded by cutting off buds with pieces of vine 2 or 3 inches long, inserting as above, and scarfing a little at the ends.

*Analysis of the Ash of the Wild Grape Vine.*

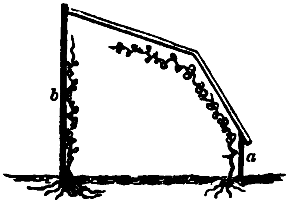
| | Wood. | Bark. |
|---|---|---|
| Potash | 20.84 | 1.77 |
| Soda | 2.06 | 0.27 |
| Chlorine | 0.02 | 0.40 |
| Sulphuric acid | 0.23 | trace. |
| Phosphate of lime | 15.40 | 5.04 |
| Phosphate of peroxide iron | 1.20 | 5.04 |
| Carbonic acid | 34.83 | 32.22 |
| Lime | 17.33 | 39.32 |
| Magnesia | 4.40 | 0.80 |
| Silex | 2.80 | 14.00 |
| Soluble silicia | | 0.30 |
| Coal and organic matter | 2.20 | 1.70 |
| | 101,31 | 100,86 |

PLANTING IN VINEYARDS AND GARDENS. Longworth, who has 70 acres, in vineyards, plants in rows, 6 feet apart, with the vines 3 or 4 feet apart in the row. Dr. Flagg, of Cincinnati, in an able treatise on the grape, recommends 5 or 6 by 2½ or 3 feet. Plant good layers of one year, or cuttings of two years' growth, and they will generally bear some fruit the second year, and a good crop the third. In common garden culture, vines are set near borders, and in other convenient places, and generally from 5 to 10 feet apart. The vineyards about Cincinnati generally yield about 150 bushels to the acre, which make 400 gallons of wine. Some set the average yield of vines at 200 gallons.

CULTIVATION UNDER GLASS. In cultivating foreign grapes, glass houses are indispensable, to prevent the effects of sudden changes, by moderating the extremes of heat and cold, and producing an equilibrium similar to the equable temperature of Europe. Some foreign grapes require artificial heat, others ripen well in a *cold house*, that is a glass house without fire heat. Most foreign grapes may be raised in N. England, under glass, by solar heat. Yet artificial heat is used for forcing these and other kinds, in order to bring them forward at a time when there is a scarcity of fruit.

Some natives are improved by cultivation under glass. By forwarding and retarding houses, which may be made by different apartments in the same building, fine grapes may be had every month in the year.

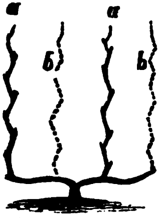
Make a grape house about 2 feet high in front, (*a*,) 15 to 16 feet wide, and 12 feet high at the back, (*b*,) and any desired length. Make a border of sandy loam, trenched 2 feet deep, rich with compost, and other manures recommended for the grape. Let it extend 6 or 8 feet inside, and 12 or 15 outside. If vines are to be planted at the back wall, the border should extend the whole width of the house. If the location be moist, drain it, or elevate the border, so as to have a dry sub-soil. Plant the vines about 1 foot from the wall, and 3 or 4 feet apart, one under each rafter, for the spur system; but for the cane system, they should be 6 or 8 feet apart. To manage a glass house, and more especially a hot house, well, requires much skill and experience. Allen's work on this subject is excellent.



*Grapery.*

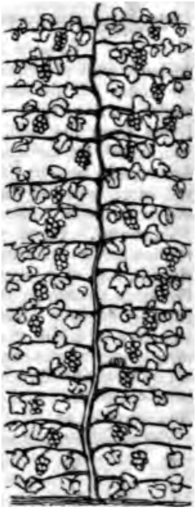
TRAINING. There are several systems of training, and various modes without any regular system, by training the vines in any way, according to convenience, taste, or fancy. The spur system is most common in glass houses, and fan training in open culture. In any mode of culture, spurs, branches, or whole vines may be cut back, so as to have the advantages of the renewal system. Vines may be trained in any desirable direction, (even under ground,) to buildings, trees, walls, &c., and then trained in the cane, spur, or fan form upon them.

*The Cane, or Renewal System.* The first season one branch is trained up; in the fall this is cut back to 3 or 4 eyes, and the next season another is trained up, and the first is extended; both are then laid down and trained horizontally, near the surface; and from each a cane is trained up, (*a*, *a*.) The next season these will bear fruit, and two more canes, (*b*, *b*,) trained up to bear fruit the next season, when *a*, *a* are cut out near the horizontal branch, leaving one eye, and new shoots trained, and so on. Dr. W. C. Char



*The Cane System.*

of South Natick, Ms., trains in this way, and he has sent us fine Isabellas an inch in diameter. Some train up the main vine perpendicularly on a building, to a convenient place, and then extend canes horizontally, and renew as above. The cane system gives excellent fruit, as it is always on new wood; but the yield is generally larger by spur or fan training. The canes should be as much as 2 feet apart. If the vine is strong, the horizontal branches may be extended, so as to have 8 or 10 canes.


*The Spur System.*

*The Spur System* is the training up of the main stem, and of spurs horizontally, cutting back the spurs, annually, to 2, 3, or 4 eyes of the new wood, according to the strength of the vine, and number of the spurs.

When the spurs have extended too far, cut out a part, yearly, training up new ones, thus changing all the old wood to new; and as the vines become old and unproductive, cut down part at a time, and train up new ones. This will combine the cane and spur method, and is an excellent system.

*The Fan, or Tree System*, (page 55,) or other convenient modes, are practised in vineyards, and in common garden culture, or in training grapes in yards, by walls, trees, buildings, &c. In gardens or vineyards, a trellis may be formed by setting posts, or stakes 6 or 8 feet high, and nailing on narrow strips of boards, or stakes alone are sufficient, if set 15 or 20 inches apart. In vineyards, where the vines are about 3 or 4 feet apart, sometimes only one stake is set to a vine, and the lateral or oblique branches are trained to the neighboring stakes.

PRUNING of grapes is not generally well understood. Some do not prune at all at the proper season; they have a mass of vines and only a little fruit, and that poor. Another absurdity, which is often added to the above, is cutting off the young shoots in summer, just above the fruit, and sometimes still worse, picking off the leaves to expose the fruit to the sun.

ascends to the leaves, and there mingles with
bed by the foliage, then it is digested, or elab-
wood, which descends to nourish the plant. So
l are the leaves, that a blight on the foliage destroys
and a frequent repetition is death to the plant.
not the fruit, should be exposed to the sun. We
oint, as thousands mistake, and grapes are gen-
ianaged.

ng the vine young prevents the growth of the
t little should be done for a year or two after it is set.
or early in Dec., all vines in open culture should be
rally. If pruned in spring, before leaved out,
leed; they may bleed in spring if pruned in win-
pruning rather tender vines, leave more wood than
d, as some may be killed, and finish pruning in
s soon as the leaves are nearly developed, when the
he vine may be seen. In summer allow a good
beyond the fruit, and about midsummer, pinch off
of the branches, to check them, and cut out feeble
and branches on which there is no fruit; then there
much foliage to absorb matter, and prepare nutri-
d by checking the growth of wood, it will be appro-
o perfect the fruit. The two great errors are in neg-
o cut off useless wood in fall, and in depriving the
useful foliage by close pruning in summer.

grapes are pruned severely, leaving 2 to 4 eyes of
ason's growth; but with native vines, several feet
much depending on the peculiar nature of the vine,
vary much,) number of branches, vigor of the plant,
&c. Some will bear on a large extent of vine; oth-
forcing by close pruning, else the fruit will fall or
mmer pruning is not necessary, excepting to remove
branches, and laterals that bear no fruit; but
ere is sufficient growth beyond the fruit, check it, by
off the top, and keeping it reduced, not allowing the
xpend its resources in making wood that is regarded
s, and cut off as soon as it is grown.

cases, liberal pruning late in fall is necessary, for
limited at their roots; and the shoots never bear but
crop being wholly on the last year's growth, which
nportance of constantly cutting back, and mak-
wood; and those parts that grow late do not ripen
produce fruit.

Some, who grow grapes under glass, pinch off the main shoots 2 or 3 eyes from the fruit, and they would do the same in open culture; but with vigorous natives we prefer a larger growth, allowing the vines to run till July, even if they extend 6 or 8 feet, or more.

The vine, left to nature, sets more fruit than it can perfect, so the value of the crop depends on judicious pruning.

REDUCTION OF FRUIT. Grapes generally overbear, which is injurious to the vine, often producing exhaustion, and the fruit is far inferior when abundant. The best mode of reduction is by close pruning, so as to prevent much fruit from setting. If too much sets, thin it in season, that the juices of the vine may not be wasted on what must be removed. Excessive bearing is injurious to all plants.

BLEEDING. Grape vines usually bleed profusely on being cut or injured, in the spring, before the leaves are developed, which is injurious, as the sap is the life of the plant. In case of accidental injury, wet a piece of bladder, and tie several thicknesses tight over the wound; if the force of sap is great, this is hardly sufficient; but sheet India-rubber is effectual. Dr. C. T. Jackson, of this city, a distinguished chemist, whose experiments and investigations have thrown much light on the subject of cultivation, cut off a grape vine, and applied a glass tube tightly to the stump, and the sap rose 26 inches, and ran over, so great was the power of expulsion. Some suppose that bleeding is not injurious, or that it may be beneficial; but this wants confirmation.

MILDEW is frequently very destructive to grapes, more especially under glass, and in sheltered situations, where there is not a good circulation of air. Sulphur or lime has been used with success, and better where both are used together. The peculiar region of grapes is a region of sulphur. They flourish well on Mount Etna, where once flowed rivers of lava.

Strew lime and sulphur on the soil and dig them in lightly. One may be sufficient. Plaster may be used, as it is a sulphate of lime; it contains both of these ingredients. The following is used with success. Put half a pound of sulphur and one peck of quicklime into a tight barrel. Pour on boiling water, sufficient to slack the lime. Pour 3 gallons soft water on the top, stir well, and let it settle. In 24 hours take the clear water from the top, and put into a stone jar for use. Add half a pint of it to 3 gallons of water, and ply with a syringe or otherwise, when the grapes are set-ig, twice or thrice a week, for 2 or 3 weeks. It will not jure foliage or fruit, and is a good manure. Covering the ound, in out-door culture, several inches deep with straw, a-weed, or other litter, is one of the surest preventives, it guards against the extremes of heat and cold, and t drought, and it greatly increases the crop.

rs. Rose bugs are often very injurious, devouring foliage, which checks the growth and destroys the op. They are difficult to kill, as a corrosive substance at will kill them will also destroy the foliage and injure nder shoots. They must be attacked with offensive sub-ances that are harmless to trees. (Page 73.) Lime ash- and plaster sprinkled on the vines when the dew is on, ffensive to the rose bug, but not destructive, nor always tual in driving them. The span worm is an insidious emy, lying close to the stem of the leaf. Most easily de-royed by the fingers. The great green worm is occasion-ly seen on the grape vine, but is easily destroyed, from its rge size. The *Thrips*, or vine-fretter, and many other in-cts, infest the grape, which may be destroyed as recom-ended on page 73.

**Preserving.** Grapes are kept in good condition until win-r or spring, by being packed in cotton-batting; kiln-dried heat bran is also good; so is perfectly dry saw-dust, or rk-dust. Various other substances are good, but they ould be perfectly dried by a strong heat. After being cked, keep in a dry place, as cool as possible without ezing.

We have kept grapes several months in excellent condi-on, by laying them into small baskets, on paper, 4 to 8 arts in each, covering them with paper, cotton, or a cloth, d hanging them up in a well aired, dry room. This is e of the best modes.

Grapes are imported in fine condition, packed in cork-st, or ground cork. They may be kept long in stone jars, ith or without cotton, or other suitable materials. Fit the ver close by paper around it, and then tie several layers paper closely over the top, and keep cool. Cotton wad-ng is better than batting, as it is glazed, and does not ick to the fruit, but it is dearer.

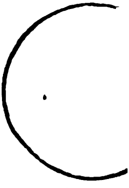
### Foreign Grapes, (*Vitis vinifera.*)

Nearly all the grapes cultivated under glass in this are foreign, and no foreign grape holds a high rank other purpose, not even in our warm or hot climat winters are too cold, our summers too hot. They cline. They have failed in the East, West, North, an after many years' trial, and numerous and varied ments, under the most skilful and persevering cultiv

Longworth made experiments on 10,000 importe from different parts of Europe, some from the Jura mc the confines of the wine region. A few years s remarked, "I advise all who are planting viney place no reliance on foreign grapes. I was 20 year and spent some thousands of dollars to no purpos not cultivate a single foreign grape in my vin Kirtland says that the hardiest foreign grapes do ceed more than one or two years in the open air, w vines are young, then the fruit mildews.

Yet some foreign grapes occasionally succee favorable circumstances. Sometimes we have fin mens of Sweet-water, White Muscadine, and others, N. England. The first six kinds that follow are g preferred for cultivating under glass, and they are a in order as preferred. Most of them ripen und without fire heat.

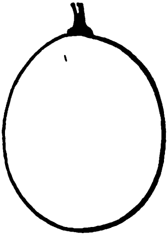
1. Black Hamburgh, *Purple Hamburgh*, *Victoria*. Bunches very large, and double-shouldered; berries very large, oval-roundish; skin rather thick, dark purple; flesh melting; juicy, with a rich, sugary, luscious flavor. Very productive, and generally preferred to all others. Occasionally it endures the winter of N. England out doors; but the ripening of the fruit in the open air is uncertain, even in the Middle States.



*Black Hamb*

2. Black Prince, *Alicant*, *Boston*. Bunches lar somewhat shouldered; berries large; oval; skin thic with blue bloom; flesh melting, juicy, with a sweet, e high flavor. A strong grower and great bearer. B that growers there prefer them to the Hambur

hardy than the Hamburgh, sometimes ripening fruit out doors, in favorable seasons, in the Middle and Western States.

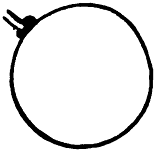


*White Muscat of Alexandria.*

3. **White Muscat of Alexandria.** Bunches large, broad and shouldered; berries large; oval; skin thick, reddish-black; flesh firm, with a sweet, rich, peculiar, musky flavor; requires artificial heat, and should be very ripe.

4. **White Frontignan,** *White Constantia.* Bunches medial, long, no shoulders; berries medial; round; skin thin, waxy, white, with a fine bloom; flesh tender, juicy, with a fine perfume, and rich, musky flavor. Hardy and productive.

5. **Black Frontignan,** *Purple Constantia.* Bunches rather small, long and compact; berries medial; round; skin thin, black, with violet bloom; flavor musky and rich. A good bearer.



*White Muscadine.*

6. **White Muscadine,** *Royal Muscadine, White Chaselas, Golden Chaselas.* Bunches large, long, and shouldered; berries large medial; round; skin thin, golden color in sun; flesh tender, melting, with a rich, sugary, delicious flavor. A strong grower, and great bearer. Buist has seen a vine, in a pot, with 29 bunches of fruit. Quite hardy and adapted to the vinery or open culture. It ripens in the Middle sections of our country; it endures the cold of N. England, and we have occasionally had well ripened fruit in favorable locations, 12 or 15 days later than Sweet-water.

7. **Charge's Henling.** Bunches large; berries medial; round; jet black; flesh melting, of a sweet, spicy flavor. A great bearer in pot or in the ground. Imported 5 years ago, by Buist.

8. **Decan's Superb.** Bunches large, and well shouldered; berries large; round; greenish-white; flesh and flavor similar to Hamburgh. A strong grower. Imported 4 years since by Buist, which he thinks promises to be the finest white grape for size and bearing.

9. **Black Lombardy,** *West's St. Peters.* Bunches large, shouldered; berries large; roundish; reddish-black;

melting, of a rich, sweet flavor. A strong grower and excellent bearer. Requires much fire-heat to perfect it.

10. White Sweet-water, *Early White Muscadine*, *White Muscadine of Lindley*. Bunches medial; berries medial; round; transparent, pale-green; flesh tender, watery, sweet, but little flavor. Often ripens here in open culture. The vines are protected by covering with earth in the fall. Sept. 1, in Middle States; last of Sept. here.

11. Black Cluster. Bunches small; berries medial; roundish; black; very sweet and pleasant. It is hardy, and flourishes well in the Middle and Western States, where it ripens in the latter part of Sept.

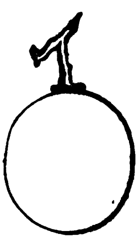
12. Early White Muscat. Buist represents this as very early, having well formed bunches, and berries round; yellowish-white; flesh very rich, juicy, spicy, and high-flavored. A great bearer. Large bunches weigh 1½ lbs.

### The Native Grape, (*Vitis*.)

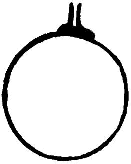
This grape abounds in most all parts of the country. Some choice kinds, or seedlings from native kinds, are the best we have for open culture. Among those well known, the Isabella and Catawba rank the highest. They are both tolerably hardy, even in the North. As the former is 2 or 3 weeks the earliest, it bears extension further North, sometimes ripening in Maine and N. Hampshire; but from lateness and other causes it does not succeed well half the time in this climate. These two kinds are fine for the Middle and Western States. In the Eastern section the Isabella is preferred, and in the West the Catawba. Dr. Underhill, a distinguished and successful vine-grower, at Croton Point, on the Hudson river, has a vineyard of 20 acres, nearly all Isabellas, the rest Catawba. We have had grapes from his vineyard of great excellence. H. W. S. Cleveland, Esq., of Burlington, N. J., is going into the extensive culture of the Isabella. Buist says that he has given Isabella and Hamburgh grapes to his friends, and they have preferred the former. We suppose both were raised under glass. In the West the Catawba is considered far preferable, being better for the table, far better for wines, and requiring no sugar; and it is less liable to rot. Both of these are liable to rot at the South; but when they mature they are very fine. When both are well ripened, the Catawba is of the finest flavor, being more vinous, but not quite so sweet as the Isabella.

Some are making experiments on seedling grapes, and we shall have something excellent and hardy by and by, even for the North. We have a collection of 40 or 50 vines, on trial, from various sections, all recommended as good, and some we know to be excellent, but we have not fully tested them. And we have raised, for experiment, 4 or 500 seedlings from 20 or 30 different kinds. From all these, and future seedlings and collections, we hope to get a few excellent kinds, sufficient for a good assortment, adapted to northern regions.

1. Isabella. Bunches large, rather compact, shouldered. Berries large; oval; purplish black, with blue bloom; skin thick; flesh tender, with little pulp, juicy, sweet, and rich, with slight musky and aromatic flavor. Ripens in N. England the last of Sept., and in Oct. In the Middle and Western States in Sept., and first of Oct. In this section it is the best grape well known, yet it fails more than half the time, and is always too late. It seldom ripens in Me., N. H., and Vt. It is tolerably hardy, very vigorous, and a great bearer, sometimes yielding 10 bushels to a vine. Native of S. Carolina.


*Isabella.*

2. Catawba. Bunches medial; loose; shouldered; berries large; roundish or slightly oval; reddish-purple; with a purple bloom; thick skin; flesh a little pulpy, but juicy, sweet, with a rich, musky, aromatic flavor. Ripens two weeks later than Isabella. The finest of all grapes for the table, and for wine in most parts of the Middle Region of the U. S., particularly in the West, where it is cultivated very extensively. It is used almost exclusively in Ohio, for wine. The Catawba is tolerably hardy, very vigorous and productive. Native of Virginia, near the Catawba river.


*Catawba.*

3. Diana. Fruit in bunch and berry much like its parent, the Catawba, but with less color. Berries round; jui rich, sweet, with musky aroma. Ripens about the time

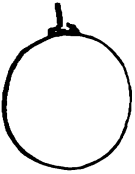
[illegible] The same prop- [illegible] in the [illegible] one sea- [illegible] Ms.

[illegible] Bunches [illegible] black; flesh [illegible] says it [illegible]

[illegible] Bunches large; berries medial; [illegible] flavor. Ripe [illegible] Brookline, [illegible]

[illegible] Bunches long, [illegible] dark purple; [illegible] In the Middle Region [illegible] better than wild grapes [illegible] in all respects. [illegible] Richmond, Va.

[illegible]



[illegible].

[illegible] which promises to be inferior [illegible] climate. Fruit like the Catawba, but sweeter and the same size.

[illegible] Scuppernong, *American Muscadine.* Bunches quite small; berries large, round; greenish-white; flesh sweet, musky flavor. It is a native wild vine of the South. [illegible] says it is the best grape for the South, is excellent for the table and for wine. Mr. J. Noyes, of Natchez, says it does well there. It cannot be propagated by cuttings, but by layers. The Black Scuppernong is about the same as the White.

[illegible] Clinton. Bunches medial; berries roundish; black; flesh sweet, and rather harsh flavor. Though inferior to Isabella, it is valued in the North from its being more hardy and earlier. Origin, Clinton, N. Y.

11. Elsinburgh. Bunches large; berries small; round; black; tender, and sweet. A good table grape. A moderate bearer. Hardy. Much cultivated in Burlington, N. J.

12. Missouri. Bunches medial; berries small; round; blackish; flesh tender, very sweet. Longworth says it makes a fine wine, resembling Madeira, but it is less productive than Catawba.

13. Lenoir, Herbemont, *Herbemont's Madeira*. Bunches large; berries small; round; purple; flesh sweet, excellent. Weller says it often rots in the South. Longworth says it is a fine table grape, and makes excellent wine, but it rots. Some think Lenoir and Herbemont are two kinds, alike in fruit, but slightly different in wood.

14. Seedling Schuylkill Muscadell. Bunches and berries small; round; dark purple; tender, sweet, pleasant flavor. Free from musk, acidity, or astringency. Last of Aug.

15. Ohio, *Longworth's Ohio*. Bunches large; berries small; excellent. Ripens with the Isabella. Too tender for the North. The Ohio Fruit Convention says, of no value except to the amateur. Weller says it is of no peculiar excellence.

16. Bland, *Bland's Virginia*. Bunches long and loose; berries small; round; pale-red; flesh pleasant; late, and too tender for the North or Northern Regions of the Middle States. Longworth says, a fine table grape, but a bad bearer, and does not ripen well.

17. Limington White. Large bunch and berry; good quality; hardy for the North. But little known.

We have fine grapes from Col. L. Chase, Cornish, N. H., and have raised seedlings from them. Our vines do not bear yet, but we have had the fruit from our worthy friend, (whose laudable example we commend;) some kinds are excellent and early. We are now brief on these, and we omit some other promising kinds, as they are for trial and comparison. We hope to make a report, by and by, that will gladden the hearts of northern cultivators.

*Strawberry*, bunch and berry small; pleasant, sub-acid flavor. *Coon*, the same, only sweet. *Nizola*, medial bunch and berry; vinous and excellent. All these last of Aug. and Sept. *Early Isabella*, large bunch and berry, more sprightly, less sweet, and earlier than Isabella. *Seedling Nizola*, medial bunch and berry; pleasant sub-acid. Sept. 1. *Beaverdam*, large bunch and berry; very musky and pungent; ripens with Isabella. This and Seedling Nizola good for wine.

## THE QUINCE, (*Cydonia vulgaris.*)

The Quince is a native of Europe. It is a small tree or shrub, usually 8 to 10 feet high, with crooked stems, and rambling branches. The leaves green above, whitish underneath; flowers large, pink and white; the fruit, which is on the shoots of the same year's growth, is large, orange color, austere in its raw state, with a peculiar, pleasant, high fragrance. When loaded with ripe fruit the quince tree is highly ornamental.

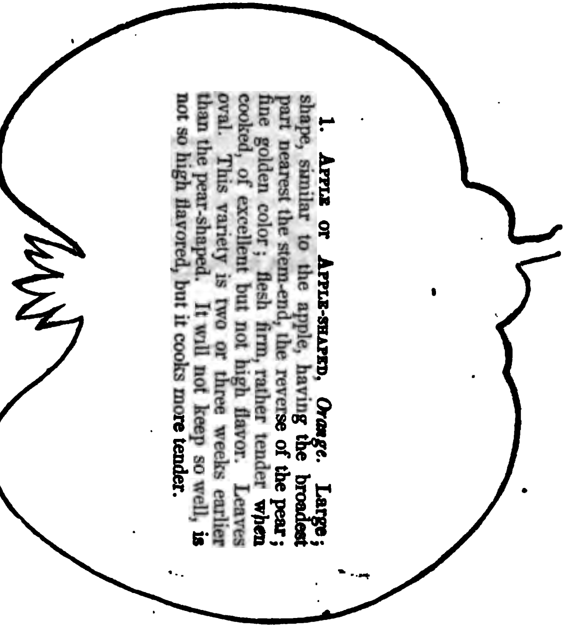
Uses. This is one of the very best fruits for preserves, marmalade, sauces, syrups, jellies, &c., either alone or with other fruits, to which it imparts its fine flavor. For this purpose it is used in tarts, pies, pastry, and sauces. The liquid, after washing the fruit with water, and standing twenty-four hours, makes a good wine with sugar. Medicinally, the quince is cooling and strengthening. The juice is good against nausea. The ripe fruit, eaten raw, is said to be good for spitting of blood, also for swollen spleen, the dropsy, and difficulty of breathing. The stock is highly valuable for dwarf pears. The Portugal is said to be best for this purpose, but the Apple quince is equally thrifty.

Soil, Culture, Propagation, Training. &c. The quince will flourish in soil varying from clayey loam, or moist, cool situations near streams and ponds, to dry, gravelly ridges. We have seen the finest crops on rather dry, gravelly hills. It is a false notion that the quince must be on wet land. The intermediate space between wet and dry land, bordering streams and ponds, is very favorable, but it does equally well on good high land tillage. In the North, a warm soil and location are necessary to ripen the Pear and Portugal varieties. Manure well, using the same dressing as for other fruit trees, and give deep and thorough culture, allowing no weeds or grass around them. Set the trees 8 or 10 feet apart, or nearer for dwarfs, and shorten in, as in pruning peaches.

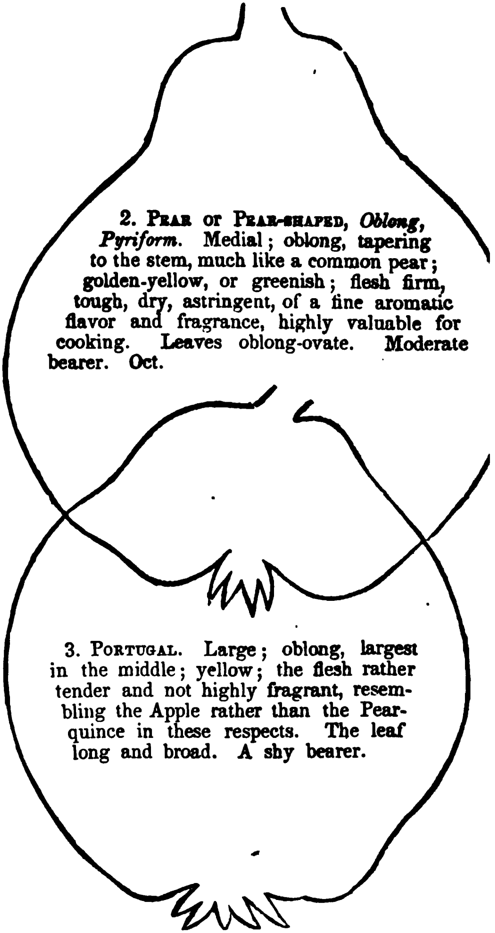
In most cases, quinces will produce the same from seed, but they are inclined to sport a little; hence a multiplicity of forms, varying from the apple to the pear. Raise from the seed in the same way as apples and pears. They may be very easily propagated by layers or cuttings, also by grafting and budding. Trained as a tree, the quince is the neatest and most convenient in tillage; but the bush form is the most natural, and when trained in this way, if a branch be destroyed by the borer, another will succeed in its place. In the bush mode, trimming is often necessary, else the fruit will be inferior to that from the tree form.

The Middle and Western States seem to be the peculiar home of the quince, but it flourishes well in this State; and in warm soil and situations, the Apple quince may be extended to the northern part of N. England, and in Upper Canada. The borer (page 88) is very destructive to the quince, but less so on moist land.

VARIETIES. Some think there is only one kind, with modifications; others say that there are a great many; both are in the extreme. There are four kinds only, used for cooking.



1. APPLE OR APPLE-SHAPED, *Orange*. Large; shape, similar to the apple, having the broadest part nearest the stem-end, the reverse of the pear; fine golden color; flesh firm, rather tender when cooked, of excellent but not high flavor. Leaves oval. This variety is two or three weeks earlier than the pear-shaped. It will not keep so well, is not so high flavored, but it cooks more tender.



2. **Pear or Pear-shaped**, *Oblong, Pyriform*. Medial; oblong, tapering to the stem, much like a common pear; golden-yellow, or greenish; flesh firm, tough, dry, astringent, of a fine aromatic flavor and fragrance, highly valuable for cooking. Leaves oblong-ovate. Moderate bearer. Oct.

3. **Portugal.** Large; oblong, largest in the middle; yellow; the flesh rather tender and not highly fragrant, resembling the Apple rather than the Pear-quince in these respects. The leaf long and broad. A shy bearer.

4. **Musk.** Small, or half the size of the other kinds; roundish; highly scented. But little cultivated. Too small for market.

**Ornamental Varieties.** *Chinese (Pyrus sinensis)* is a pretty shrub, of upright growth, oval, shining leaves, and pink flowers. Fruit beautiful; large; long-oval; smooth; greenish yellow; flesh firm, dry; makes a beautiful pink-colored preserve. Ripens late. *Japan (Pyrus Japonica)* is a low shrub, with small, dark leaves, bright scarlet flowers. Fruit dark green, hard, unpleasant, and useless. *Blush Japan* has white flowers with a blush; otherwise similar to the latter.

## THE APRICOT, (*Prunus Armenia.*)

The Apricot, with its early white blossoms, glossy foliage, and yellow ruddy fruit, is very ornamental as well as useful. The fruit resembles a peach externally; the stone is like that of a plum, and the flesh of some kinds seems to be intermediate between these two fruits. It is usually dryer than the peach, but Brown's Early, Newhall's Early, and some others, are juicy, and in quality are equal to an excellent peach. The Apricot is important from its earliness, coming in between the main crop of cherries and early apples, pears, peaches, and plums. The tree is small and spreading, resembling a plum tree, tolerably hardy, but, as it blossoms earlier than other fruit trees, it is more liable to injury from frost. It flourishes best in the Middle States. N. England is too far north for raising it to much extent. Some hardy kinds, and natives of New England, do pretty well in sheltered locations. Generally, it is very uncertain.

**Uses.** The apricot is excellent for the dessert, and, in moderation, very wholesome. It is also fine for preserves, pastries, marmalade, jellies, syrups, and for drying.

**Propagation.** It is more productive on the plum, as this fits it for strong moist soils, where it blossoms later, and is less exposed to the curculio. It is more liable to fail on the peach. From valuable natural trees good kinds may generally be raised from seed, that will be good and more hardy and durable. We have on trial the Golden, said to be first rate, and it produces its like from seed. Kirtland whip grafts, early in spring, on wild plum stalks, with excellent success. He sets the scion with one bud above the ground.

SOIL, LOCATION, AND CULTURE. The best soil is a deep, rich, moist loam. It does best trained as espaliers. When very luxuriant, shorten in, as with the peach, for, like this, it produces its fruit on the last year's shoots. In the North, it succeeds best in cities, towns, and villages, which afford some protection. Cultivate and manure as for the peach and plum.

VARIETIES. Brown's Early and Newhall's Early are superior, but have not been well tested. Moorpark is very good and hardy, and most cultivated here, and that is but very little. Dubois is hardy and productive, but inferior in quality. Large Early and Peach are excellent; Hemskirke new, but very promising. For the North, Dubois, Roman, Moorpark, and others for trial.

1. BROWN'S EARLY. Very large; short-oval; yellow, bright red cheek; flesh yellow, melting, juicy, rich, luscious flavor, and high perfume. We describe from memory. This is the largest, best, and one of the earliest of apricots. A very great grower, and promises to be productive. It is in Chelsea, Ms., and as we can find nothing like it in books or catalogues, we think it is original. 20 to 30 July.

2. NEWHALL'S EARLY. Medial; short-oval; bright orange; deep red cheek; tender, melting, juicy, of rich, delicious flavor. First rate. Clingstone. July 25 to Aug. 5. By Paul Newhall, Lynn, Ms.

3. MOORPARK. Large; roundish-oval; yellow, ruddy cheek; flesh bright orange, melting, juicy, of a rich flavor. Freestone. A small perforation through the stone. 1 to 15 Aug. Origin, England. Slow growth; enormous bearer. Needs a strong, deep, rich soil, and sheltered location in this climate.

4. DUBOIS'S EARLY GOLDEN. Small; roundish-oval; pale orange; moderately juicy and sweet, good flavor. Freestone. 10 days earlier than Moorpark. Very productive, and generally free from curculio. Fruit of original tree sold in New York, in 1846, for $90. By Mr. C. Dubois, Fishkill Landing, N. Y. From Horticulturist. We have this growing, and it seems hardy.

5. LARGE EARLY. Medial; roundish-ovate, deep suture; orange, bright red in the sun; rich, juicy, and excellent. Freestone. Last of July. Productive.

6. HEMSKIRKE. Large medial; roundish; bright orange, red in the sun; tender, juicy, rich flavor. First rate. Stone

small. Aug. 1. Vigorous; great bearer. Origin, England. But little known in this country.

7. **Peach.** Very large; roundish, with compressed sides; distinct suture; yellow, with deep orange and dark brown in the sun; flesh deep yellow, juicy, rich, with a high, delicious flavor. Perforation in the stone. Aug. 1. Origin, France. A very large, handsome, and excellent variety.

8. **Breda.** Small; roundish; deep orange, blush spots in the sun; juicy, of a rich, pleasant, vinous flavor. Fine for preserves. Freestone. Former part of Aug. Vigorous and productive. Origin, Africa.

9. **Roman.** Medial; oblong; pale yellow, rarely red dots; flesh rather dry. Hardy for the North. Aug. 1.

## THE STRAWBERRY, (*Fragaria.*)

The Strawberry is peculiar to the temperate regions of the old and new world. In many parts of this country it grows wild on new lands, furnishing large crops of the finest fruit. It is much cultivated near markets, and though the culture is greatly extending, the demand keeps up the price. Cincinnati is the greatest strawberry market in the world. The quantity in 1847 was 6000 bushels. One grower, in 1846, picked 128 bushels daily during the height. In this vicinity some make it their chief business, and cultivate several acres.

It is usually a good crop, sometimes highly profitable, yielding $800 to the acre, but on an average $300 to $400. Mr. J. O. Wellington, West Cambridge, raised 3000 quart boxes on three quarters of an acre, and sold them at 37½ cents per box. Mr. Job Sumner, of Roxbury, raised, of Early Virginia, at the rate of $1600 worth to the acre, at 25 cents per box.

**Uses.** It is one of the most delicious and wholesome, and the earliest of all fruits. It is excellent for the dessert. It makes a fine jam and jelly; and it is used for ices, preserves, and various condiments. With the juice and sugar we have made the finest of wine, excellent for invalids. The juice makes a cooling and refreshing drink.

**Soil and Manure.** The strawberry flourishes well on any good tillage, from rather moist to tolerably dry. Heavy lands are hard to work, and on very dry soil, a drought may cause a failure. Prefer a deep, friable loam. As there is much labor and great produce on a small space, it is good economy to use the best soil, and put it in the finest condition. Common stable manure is good. Use also, if convenient, wood ashes, bone manure, plaster, salt, lime, &c. Ashes and bone manure are cheaper than all stable manure on dry lands.

PROPAGATION. Where there is a fine fertile soil around plants, they propagate themselves very rapidly, by runners that take root, and send up new plants. In this way, a few plants set in spring, will soon cover the ground. The Red and White Bush Alpine have no runners, and are propagated by dividing the roots.

CULTURE. Prepare the land by liberal manuring, deep ploughing, and thorough pulverization; and in the spring, as soon as the plants start, that strong ones may be selected, set out rows 4 feet apart, then the cultivator may be run between them, and save much labor. If the plants are set early, and the land is in good tilth, and rather moist, set Early Virginia and other vigorous growers, 10 to 12 inches apart in the row; and Hovey's Seedling and other moderate growers 7, 8, or 9 inches, and the vines will run and cover the land, excepting a narrow path between the rows. If circumstances are unfavorable, set closer, or every 4 feet set 2 rows 18 inches apart.

Some set in August and the first of September; it is often convenient after taking off early crops; and if it be wet, this season answers well; but if it be dry, only a few new plants will be produced. The surer way is to set 2 rows as named above, or 3 rows a foot apart, to every 4 feet, and set the plants a little nearer in the row than above; then, if they do not form many new plants, there will be old ones enough for a good crop.

The first season, keep the land well cultivated, and free from weeds, stirring the soil often. The next spring, thin the plants when too thick, destroy all weeds, and stir the soil, but not after the plants blossom. After hoeing, and before the plants have grown much, spread among them straw, sea-weed, pine *shives* or leaves, or other litter, to keep the berries free from grit and the land loose and moist. This will decay and form manure. A full crop may be expected.

Soon after the crop is off, apply compost manure, then harrow until one third or one half the plants are torn up, if they are very thick. With a pronged hoe mix the manure the soil, if not done sufficiently with the harrow. Some omit applying manure till fall or spring, and work it into the soil in the spring. This is like the peasant who crammed his turkey in order to fat it, and had just completed the operation as his guests arrived who were to feast upon it. To get a good crop, manure and cultivate well the previous year, after the crop is off; then the plants will be strong and productive. The second spring, thin the plants if too thick, and apply litter, as before.

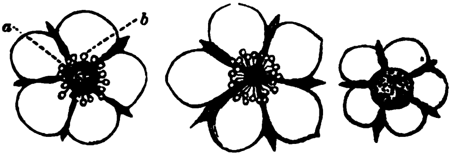
After the second crop is off, plough in the vines, and set cabbages, or sow turnips, or other late crops. In this way, 3 crops are obtained from the land in 3 years. After 2 crops of strawberries, the plants become too thick, and the land may be full of weeds and need renovation. Yet, by care in thinning, manuring, and thorough culture, beds have been continued good 4 or 5 years. The harrow may be used to aid in this improvement. Some mow their plants in August, when it is not very dry; others burn them over. They flourish well and produce large berries when partially shaded, but they are not so sweet.

Constant Culture on the same Land. Plant and manage as usual until the first crop is off; then, or in a short time, turn under deeply all the plants, excepting a strip about 8 or 10 inches wide, between the paths, manuring the land well, and making it fine and mellow. The plants on this strip will send out runners, and cover the land with plants. In the fall or spring, turn in the narrow strip, and use it for a path, taking up a little of the soil and spreading it over the plants. This will protect the plants, both by the soil and by the depression, allowing the water to drain off. If it be dry in fall, and plenty of plants are not established, let the strips of old plants remain, and use the same paths again.

In this mode, bury some manure with the plants, and apply compost, ashes, bone, or other mineral manures, on the surface, after turning in the plants, and work them into the surface soil. Some leave the paths nearly as wide as the beds, which gives alternate culture and rest to the land. By this mode, the land will bear a succession of crops, as the principal production, the plants, is turned in for manure.

Condition of the Flowers. In its wild state, the strawberry has perfect flowers, like the apple, pear, &c. (Page 75.) But owing to high culture and new seedlings, many varieties now vary from this primeval form. Some are mostly staminate, and will in no case produce large crops; others are pistillate, and alone will yield but little, and that imperfect, fruit; but with a perfect or staminate kind to fertilize them, they will yield larger crops than can be obtained even from perfect kinds.

*Strawberry Blossoms.*



Perfect. Staminate. Pistillate.

In the left figure, the centre (*a*) is a little cone similar to a small green strawberry, and is composed of pistils, and the little stems around it (*b*) represent the stamens, with anthers at top, which contain the fertilizing dust. In the middle figure, the centre is small, as the pistils are imperfect, while the stamens are fully developed. In the right figure, the pistils or centre organs are full and large, and no stamens are perceptible. The flower-leaves or petals are smaller than in the other conditions.

The strawberry is not wholly staminate or pistillate, like those plants that were originally and are invariably only one or the other; but the staminate kinds have rudiments of pistils, and the pistillate kinds have stamens imperfectly developed. Hence partial crops on such. Cultivators are aware that plants produce their fruit on pistillate flowers, (page 75,) and that the pollen of the staminate is necessary to fertilize them.

To Longworth belongs the honor of first publishing to the world this anomalous condition of the strawberry, and the mode of turning it to good account; and his system is now almost universally adopted. There will be living monuments to his memory, while the rains fall, the sun shines, and science equally genial beams on the human mind.

Culture of Pistillate Plants. Some set every third row or bed of 4 feet wide with staminate or perfect kinds. Others think every fourth or fifth is sufficient, but this is not well settled. To prevent mixing, do not allow them to cross the path. If it is not intended to keep the kinds separate, set both kinds in the same row, putting a staminate every five or six feet, and place them thus; (s, staminate; p, pistillate;)

s p p p p p s p p p p p s p p p p p s
p p p s p p p p p s p p p p p s p p p

Great success attends this system, and it is no longer a problem, but an established fact.

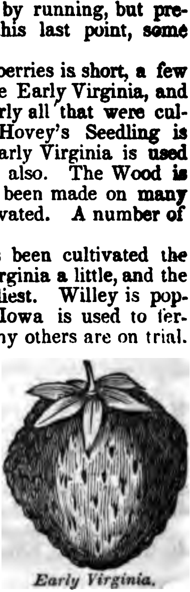
These two kinds should blossom about the same time; and we would suggest whether the complaint, that Hovey's is small in the last berries, is not owing, in part, to imperfect fertilization, from using staminate kinds with it that blossom earlier, as is usually the case.

Longworth says, that he has never seen a pistillate plant that, by itself, would produce any perfect fruit; that staminate plants, when partially productive, generally produce the sweetest and finest fruit; that the plant, be it staminate or pistillate, never changes its character by running, but preserves its primeval character. On this last point, some writers express a different opinion.

VARIETIES. As the season of strawberries is short, a few kinds are sufficient. Until recently, the Early Virginia, and Wood, for a later succession, were nearly all that were cultivated in N. England. Recently, Hovey's Seedling is much cultivated as a later crop, and Early Virginia is used to fertilize it, and for an early crop also. The Wood is nearly abandoned. Experiments have been made on many others, none of which are much cultivated. A number of new seedlings are now on trial.

Around Cincinnati, the Hudson has been cultivated the most, next the Neck Pine, the Early Virginia a little, and the Duke of Kent in a small way, as the earliest. Willey is popular in some parts of the West. Iowa is used to fertilize the Hudson and Neck Pine. Many others are on trial.

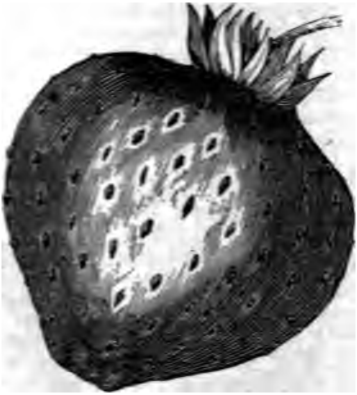
1. EARLY VIRGINIA. *Large Early*, or *Large Early Scarlet* probably. Rather large; roundish-oblong, varying to conical and ovate; bright scarlet; very juicy, excellent flavor, blending saccharine and sub-acid. June 12 to 27. This is the best of all early strawberries that are generally known in this section, being very vigorous, hardy, and a great bearer Recently, Hovey's Seedling is cultivated



*Early Virginia.*

extensively with it for a later succession. We think it is the Large Early, for bearing excels it alone, (page 262,) and, with a pistillate, it serves as a fertilizer also. Perfect. Our engraving is not from the largest size.

2. Hovey's Seedling. Extremely large; roundish-oval, inclining to conical; deep shining scarlet; seeds slightly imbedded; flesh firm, with a rich, sprightly flavor. June 20th and July. Decidedly pistillate. A prodigious bearer, with a staminate. Hardy and vigorous. Easy to pick and hull. One man picked, hulled, and arranged 100 quart boxes in a day. The best strawberry generally known in this section. Raised in 1833 by Messrs. Hovey, of Boston, in their garden at Cambridge.



*Hovey's Seedling.*

3. Duke of Kent. Small; roundish-conical; scarlet; good. The earliest kind, and valuable for this only. Flowers perfect.

4. Boston Pine. Large; roundish; deep red; juicy, of a sweet, delicious flavor. A few days later than Early Virginia. Nearly perfect. Under high culture and vines thin, a great bearer; otherwise it fails. Lately introduced, and cultivators give various accounts of it. A new seedling by Messrs. Hovey.

5. Hudson. Very large; flattish-conical; dark red; rather acid, but brisk and fine-flavored; ripens in the middle season, with the Neck Pine. Pistillate, but a great bearer with a staminate. This is the principal kind cultivated about Cincinnati and Philadelphia; in the former place more than all others; being hardy, productive, and excellent. This is different from the Hudson of Boston and New York.

6. Willey is nearly the same as the Hudson. Very productive, hardy. Elliott ranks it among the very best.

7. HUDSON BAY, *Hudson* of New York and Boston, *Late Scarlet*. Rather large; ovate, necked; dark shining red; flesh firm, of a brisk acid flavor. Late.

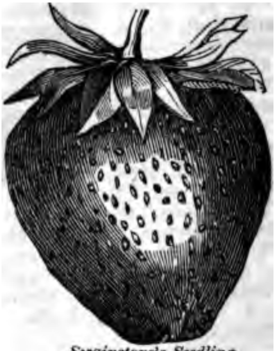
8. BLACK PRINCE, *Black Imperial*. Large; roundish-ovate; reddish-purplish-black; flesh firm, of a high and excellent flavor. Only a little known in this country; productive, vigorous and hardy. It requires a strong soil, and a staminate kind with it. Ripens with Hovey's Seedling. Decidedly pistillate. Foreign. Eaton speaks favorably of it.

9. NECK PINE. Large; with a slender neck; pale, bright, red; flesh white, delicate, rather acid, but fine flavor. Ripens in the middle season. A great bearer, with a staminate. At Cincinnati, the next in importance to the Hudson, before Hovey's was introduced. Pistillate.

10. SWAINSTONE'S SEEDLING. Large; ovate-conical; light glossy scarlet; flesh solid, of very fine flavor. A vigorous grower, moderate bearer, being staminate. Begins to ripen rather early, and matures gradually. Beautiful. Foreign.

11. JENNEY'S SEEDLING. Rather large; varying from flattish-round to roundish-conical; dark red; flesh firm, and of the very highest flavor. A good grower and bearer. June 20 to July 4.

12. METHVEN CASTLE, METHVEN SCARLET, *Warren's Seedling*, *Eton*. Very large; roundish; dull scarlet; flesh coarse, soft, inferior. Ripe rather early. Pistillate. Few blossoms. Poor bearer. Foreign.



*Swainstone's Seedling.*

13. KEENE'S SEEDLING. Very large; purplish scarlet; a rich, high flavor. It has a high reputation in England, but here Hovey's and others are preferred. Staminate, inclining to perfect.

14. ROSS'S PHŒNIX. Very large; irregular coxcomb-shaped; dark, purplish-red; good flavor. Generally poor here. Sometimes, on a rich, deep loam, the crop is large. Ripe the middle season. Staminate.

15. Iowa. Large; early; staminate; and valuable as a fertilizer, and thus used about Cincinnati.

16. Alpine, *Bush and Running*, and Wood, are too for profit, and may be regarded as fancy kinds. The long, and are of fine flavor. As the Bush Pine does not it is used for bordering, and is propagated by dividing roots. The Wood is late, long in use, of fine flavor, m admired, but Hovey's is taking its place. Perfect.

17. British Queen. Extremely large; roundish; sca fine, rich flavor. Rather early. But little known h Rather tender. As it is staminate, it will not bear wel this country.

18. Stoddard's Red Alpine. Some cultivators say the Old Alpine, others that it is new and valuable.

19. Richardson's Seedlings. Mr. J. Richardson, C bridgeport, Ms., has recently raised three seedlings, pro ing, but not well tried, nor the condition of flowers kn *Richardson's Early* ripens with Early Virginia, and is la *Cambridge* resembles Hovey's, and ripens with it. *Rich son's Late* is very large; flavor fine. June 20 to July 1

**20. Burr's New Pine.** Large; short-conical; light crimson; sweet, rich, highly aromatic. Downing says, "One of the 3 or 4 best sorts." Barry says, "It has no superior." Ripens with Hovey's Seedling. Not yet tested in this region. Hardy, vigorous, and productive. Pistillate. Originated by J. Burr, Columbus, O.

*Burr's New Pine.*

21. Mulberry. Large; round; very dark red; juicy, of a fine, high flavor.

22. Prolific Hautbois. Large; conical; light purple, blackish in the sun; sweet, rich, rather musky flavor, pleasant to some. Ripe rather early. Nearly perfect, in ing to staminate. Pretty good bearer. This is a d species, and will not mix with others.

23. Fay's Seedling. Very large; roundish-conical; red; juicy, very pleasant. June 20 to July 5. New but little known. By Mr. Isaac Fay, Cambridge.

24. **Myatt's Deptford Pine.** Very large; wedge form; bright scarlet; flesh firm, with excellent flavor. Ripens the middle season. Staminate.

25. **Profuse Scarlet.** A seedling from the Large Early Scarlet, by Wm. R. Prince, and it resembles the parent; but being pistillate, it is a greater bearer. Ripens with the Black Prince.

26. **Dundee.** Rather large; roundish; scarlet; rich high flavor, rather acid. Hardy, productive, late.

## THE CURRANT, (*Ribes rubrum.*)

The Currant is a small shrub, remarkably hardy and productive, a native of the north of Europe. We have a few native useless kinds.

Uses. The currant is acid, but juicy, and of a fine flavor. It is highly acceptable in the hot season in which it appears. Green or ripe, it is good for tarts and for sauce. It is used for jellies, and for condiments to many dishes, and is substituted for lemons in making a pleasant, cooling drink. An excellent wine is made from the juice, by adding 2 parts of water and 3 lbs. of sugar to the gallon; but the better way is to make a strong syrup, by adding to the juice from each quart of currants a pound of sugar, straining and bottling, or putting into casks, and corking as tight as it will bear, and setting in a cool place in the cellar to prevent rapid fermentation. A little water may be added to the pomace, so as to make a quart bottle to each quart of currants and pound of sugar. We have kept this syrup one or two years, with nothing added, and it is always sweet and fine, and a far better medicine than imported wines, all of which contain alcohol, besides what is developed in the fermentation of the juice.

A jam from black currants is used for sore throat. The currant will hang long on the bush, after ripe, if well shaded with leaves, and especially if covered with mats, cloths, &c. To keep the fruit, pick it when fully grown, dry from rain or dew, put into glass bottles, cork and seal tight, cover partially in sand or earth, in the cellar.

Soil, Propagation, Culture, &c. The currant flourishes on almost every soil, from cold and wet to light and dry; but a strong, tolerably moist, rich, deep loam is the best. Early in spring set cuttings in a good soil; they will be sure to grow, and in two years be large enough to plant out. Or propagate by offsets, which, if set in the fall, will yield a tolerable crop the first year. One eighth of an acre, thus set, produced 500 quart boxes the first season. Set the bushes in rows 6 feet apart, and 4 feet apart in the rows.

Many writers recommend training the currant as trees; but when thus trained, they soon become stinted and covered with ross, and fail. But train as bushes, and cut out the old wood, and encourage a fresh growth, and they will long continue to yield abundant crops of fine fruit. We have tried both ways, and proved these facts.

The currant bears sparingly on the last year's growth, and mostly on two years' old wood. After the fruit is off, cut away at the ground the three years' old wood, especially all rossy or stinted stems, leaving the present and last year's wood. Remove feeble shoots, and, if thick, some of the present season's growth on the outside, to bring the bearing wood for next year outward. This will give greater growth and strength to the succeeding wood. Clip off 4, 5, 6 or 8 inches of last year's growth, according to its height; this will cause a growth of spurs for an abundant crop. A liberal dressing should be applied and worked in around the bushes. If this be neglected in summer, attend to it in the fall or early in the spring; but the crop will be less for so late culture, the same as with the strawberry, (page 265.)

INSECTS. The currant-bush borer is produced from a blue-black moth, which appears about the middle of June, and lays eggs singly near the buds, which hatch, and the young borer enters the stem to the pith, which it devours, forming a burrow 4 or 5 inches in length, destroying the bush. A remedy is difficult. Cut off and burn all affected stems. Apply to the bushes, before the season of the moths, lye or potash water, sulphur, tobacco, or other offensive matters. Smoking the bushes may be beneficial. For various insects on the foliage, apply whale oil soap.

VARIETIES. But little attention has been paid to raising currants from seed. Yet a few superior kinds have been produced, which encourages further experiments. The small currant is well known, as it is cultivated all over the country, but it is becoming measurably supplanted by larger kinds.

1. RED DUTCH. *Large Red Dutch.* Much larger than common red, and less acid; large clusters.

2. White Dutch, *New White Dutch*. Large; yellowish-white, transparent; much less acid than red currants. Perfectly hardy, even "away Down East."

3. Champagne. Large; of a pale pink color, between the red and white.

4. Knight's Early Red. A week or ten days earlier than other varieties.

5. Knight's Sweet Red. Not perfectly sweet, but comparatively so, being less acid than the White Dutch.

6. May's Victoria. A new variety from England. We have had bunches over five inches long. The berries are very large, bright red, excellent flavor, and hang long on the bush in perfection. Foliage thick, deep green. Of great excellence.

7. Cherry. Very large, hence its name; round; crimson; agreeable flavor. Of a beautiful appearance. The bush is vigorous. Poor bearer, not worth cultivating. Recently introduced from Italy, via France.

8. Black Naples. The largest and best of all black currants. The fruit is rather late. Good bearer. It will not endure a southern climate.

9. Common Black. Inferior to the above.

10. Ornamental Kinds,

*May's Victoria.*

*Missouri Currant*, from the Rocky Mountains, is a
its fragrant yellow blossoms; and the ***Red Flow***
*rant*, from the western part of America, bears be
clusters of large crimson flowers. But it is too ten
the North.

## THE GOOSEBERRY, (*Grossulaceæ*.)

The Gooseberry mostly cultivated in this countr
native of the north of Europe, and has been grea
proved by cultivation, and thousands of varieties pr
from seed. It is raised largely in the cool, moist clin
England, but in our hot, dry summers it often fails,
the Northern States. It is still more uncertain in the
States, and it almost totally fails in the South. It is
to mildew or blight. In Canada, and other northern r
it succeeds better. We have several native varieties.
are quite common in our swamps, and are often fo
high lands. These, though small, are of excellent c
and from them, by seed and cultivation, we can get v
kinds.

Uses. In the green state the fruit is excellent fc
tarts, sauces, puddings, &c., and it is early in use.
of the most palatable kinds are very acceptable as a
They make fine preserves.

Soil and Management. As the gooseberry in this
suffers from heat and drought, the soil should be
moist loam, well manured and cultivated. Trenchin
soiling, or trench ploughing, is an advantage, as it
moisture in a dry time. A cool location is preferable
north side of a paling fence is a good situation. In a
to compost manure, soot is excellent, and so is a little

New varieties are raised from seed, and desirable
are propagated by layers, cuttings, and offsets.
thrifty shoots of the previous year, and plant then
moist, rich, and partially shaded soil, early in fall, o
in spring. If you would train them as trees, cut
buds that would go below the surface, to prevent su
but, like the currant, the gooseberry succeeds best
trained as bushes, as it affords the advantage of cutti
the old wood, and training up new, thus renewing the
and rendering it more durable and productive. Tho
t [illegible] as trees, show the impropriety of their own
L. [illegible] ng that they are short-lived, as to their utility.

The cuttings should be about one foot long, and one half set below the ground. In one or two years they may be set out permanently. Prune liberally as soon as the crop is off, or in fall or early spring, — the sooner the better; removing the old wood, and thinning out the poorest branches, when they are thick, so as to admit air and light. Clip off the tops. On good management the quality and size of the fruit greatly depend. In training as trees, allow no suckers, unless the tree is declining, and a vigorous sucker is trained to take its place. In June it may be necessary to pinch off vigorous shoots, to give more nutriment to the fruit, and thin the fruit when too abundant.

To prevent mildew and produce good crops, select a cool soil and airy situation. Cultivate well and deeply; prune well. Lay salt hay, sea-weed, or other litter, with one or two quarts of fine salt to a square rod, around the bushes. Lime and sulphur, incorporated into the surface soil, are good against mildew. When by a white-washed fence or wall, they are not so liable to mildew. Wood ashes, sifted on when the leaves are just out, and once or twice after, is also good against the mildew. Spent tan around the bushes is said to prevent the effects of gooseberry caterpillars, that are sometimes destructive.

VARIETIES are numerous — almost endless, few only of which are worthy the attention of American cultivators. The following are the best, arranged in order of preference.

1. HOUGHTON'S SEEDLING. Rather small; oval; skin thin; reddish brown; flesh very fine, tender, sweet and superior, particularly for the dessert. A prodigious grower and great bearer. We set small layers, and the next year, all the shoots were covered with fruit. Hardy; the only kind free from mildew. Habits like Crown Bob. The best kind for general culture. Origin, Lynn, Ms., by Abel Houghton, and doubtless from our native kind

*Houghton's Seedling.*

2. RED WARRINGTON. Rather large; roundish oblong; hairy; first quality, rather late; drooping branches. Hangs on long, without cracking, and improves in flavor.

Crown Bob.

Whitesmith.

3. **Crown Bob**, *Melling's Crown Bob.* Large; roundish-oval; red; hairy; first quality; spreading branches.

4. **Whitesmith**, *Woodward's Whitesmith.* Large; roundish-oblong; white; downy; first quality; erect branches.

5. **Roaring Lion**, *Farrow's Roaring Lion.* Extremely large; oblong; red; smooth; fine flavor; hangs long; drooping branches.

6. **Parkinson's Laurel.** Large; obovate; green; downy; first quality; erect branches.

7. **Green Walnut.** Medial; obovate; green; smooth; first quality; spreading branches.

8. **Keene's Seedling.** Medial; oblong; red; hairy; first quality; early; drooping branches.

9. **Early Sulphur.** Medial; roundish; yellow; hairy; first quality; very early; erect branches.

10. **Red Champagne.** Small; roundish-oblong; hairy; rich flavor; erect branches.

11. **Yellow Champagne.** Small; roundish; hairy; first quality; upright branches.

12. **Venus.** Medial; obovate; white; hairy; finest flavor; hangs on long; erect branches.

## THE RASPBERRY AND BLACKBERRY.

### The Raspberry (*Rubus ideus*)

Is a small, low shrub, a native of Europe and America, of rapid growth and easy culture.

Uses. The fruit is very highly esteemed, being of a pleasant sub-acid flavor, and very refreshing, cooling, and healthful; coming in during the hot season, immediately after the strawberry. It commands a high price in market, generally retailing in Boston at 30 cents per quart. It is used for sauces, jellies, jams, preserves, tarts, and ices. Wine and syrup are made of the juice, the same as from the currant; it also makes a refreshing drink.

Soil, Propagation, Culture, &c. It flourishes on soils varying from moist to dry; but the best is a rich, deep, rather moist, sandy loam. It will pay well for liberal manuring, and high culture. Allow no grass or weeds among the bushes. Propagate by offsets, containing 2 or 3 canes, or sprouts, if convenient, and set them 5 feet between rows, and 3 or 4 feet between hills, which will allow of convenient culture. The American Black and White, and Ohio Everbearing, may be propagated by layering the reversed branches.

The raspberry bears on new growth, on last year's canes. Soon after the crop is off, cut away at the ground all the old stems, and the feeble young ones, leaving 5 or 6 of the best new canes; and manure and work it into the soil. Better do this as soon as the crop is off, as it gives strength and firmness to the young shoots; but it may be done in fall or early spring.

Cut off 6 or 12 inches of the young shoots. In fall lay down the canes, bending them over a heap of earth around the root, to prevent their breaking, and cover them about 3 inches deep in soil, or with sea-weed, evergreen boughs, &c. In spring take them up and tie them to a stake, allowing them to spread at top. It flourishes far better, especially in dry soil, if the ground be covered a few inches deep with salt hay, sea-weed, or other litter. Late fruit may be had by cutting the canes down near the ground, or by cutting off the new growth soon after it has started. A good crop will give a quart to each hill, or more.

Varieties. Most of our choice kinds are foreign; but of late, some native seedlings have been introduced, claiming peculiar merit. The foreign need protection in winter, particularly in the North. The new natives have not been well tested in cold regions. American Black, White and Red, and the Ohio Everbearing, are perfectly hardy, and need no protection. Franconia is tolerably hardy, but needs to be covered in the North.

Franconia is best for the market, Red Antwerp next, Ol for a later succession; American Black is also excellent, a the best of all for cooking. Fastolff is new, (Buist says o under a new name,) and fine for the private garden, l fruit is too tender for transportation. Dr. Brinkle's kinds are promising.

Red Antwerp.

1. Red Antwerp, *New Red Antwerp, True Red Antwerp.* Large; conical; dull red; flesh firm, rich, juicy, with a fine, sweet, high flavor. July 15 to 30. Canes tolerably strong, pale brown; leaves large. There is a small Red Antwerp cultivated in this country, much inferior to the New or True.

2. Yellow Antwerp, *White Antwerp.* Large; nearly conical; pale yellow; sweet and fine flavor. Canes stout, vigorous, yellow, with many spines. Bears long in succession. 2d week in July.

3. Franconia. Very large; obtuse conical; bright purplish red; flesh firm, of a rich, brisk, acid flavor, more tart than Red Antwerp; superior for preserves. July 25 to Aug. 10. Adapted to northern culture, being more hardy than most foreign kinds. Canes strong, spreading, brownish, with few stout spines; leaves long, narrow, deep green.

4. Ohio Everbearing. *Ohio.* Like the American Black in every respect, excepting it bears largely late in the season, even to Oct. and Nov., where the season is long enough. Valuable to keep up a long succession.

Franconia.

5. American Black, *Black Raspberry, Thimbleberry.* Th variety is well known. It grows spontaneously on new a old lands, in cold, rich, wet soils; and on warm, dry, po situations. It improves by cultivation. Very vigorou hardy, and productive, and the fruit is excellent, particula for tarts, pies, and other culinary purposes. It is smal rather flat or semi-globular: dark purple or black; rath

a brisk, pleasant flavor. Ripens rather late,
n succession.
n White is like the above, excepting in color,
yellow, and the bushes are more vig-

*Fastolff.*

. Very large; oval-
purplish red; ten-
and high flavor;
Red Antwerp; con-
succession. Canes
and branching, with

. Large; fine flavor;
re. June 12 in Phil-
it was originated by
e, who describes it
rist, and names it
. P. Cushing, Esq., Wa-
., a distinguished patron
re and horticulture.
. Very large; deep
ellent flavor. July. By the same.
WILDER. Size of Fastolff, roundish; cream-col-
fine. Vigorous, and promises to be hardy. By
n Horticulturist. Named in honor of the late
f Mass. Hor. Society.
. A new English ever-bearing variety of
Not fully tested in this country.
SCARLET. Medial; obtuse-conical; red;
Bears well.
RED, *Common Red*. Medial; roundish;
er acid flavor. Earlier than most foreign
non of natural growth. Preferred for im-
r to liquors.

## THE BLACKBERRY.

y, of several species, is a native of this
ws spontaneously, producing abundant crops
fruit on new lands. When of large size, it is
ed and of richer flavor than the raspberry. We
fruit sold at $1 a quart, that was not a whit
fine) than we have picked (a quart without
our steps) on new lands in Maine, of whi

our engraving is a true type. We have measured bushes of one year's growth 10 feet high. We did not dream, in our boyhood, when tearing our legs among thousands of brambles, of ever seeing this fruit cultivated, and sold at enormous prices.

The blackberry ripens long in succession, coming in immediately after the raspberry. Owing to its great excellence, bees, wasps, flies, &c., claim a large share. Some *blackberries* are *white*, but they are as great an anomaly as a *white blackbird*, or *white crow*, which is seldom seen.

USES. This fruit, in perfection, is not excelled by any that the wide world produces. It is delicious for the dessert. It is excellent for tarts, pies, puddings, cakes, and various other purposes. With milk, it makes an excellent dish. The juice makes superior wine and excellent vinegar for the table. We now have a few gallons of vinegar of the most beautiful color, retaining the peculiar blackberry flavor.

SOIL, PROPAGATION, AND CULTURE. The blackberry grows freely in a warm, tolerably dry or rather moist, deep, rich soil. It abounds among stones, old logs, fences, and natural hedges. Keep the land rich and mellow. Besides other manures, use ashes, leaves, and vegetable mould. It is propagated by seeds, and by offsets at the roots. Train up new wood, and cut away the old, to keep the bushes vigorous and productive.

1. HIGH BUSH, (*Rubus villosus.*) Fruit large; long-ovate; shining black; very tender, juicy, of a sweet, rich, spirited, aromatic flavor, resembling the orange. Growth straight and upright, then the tops become recumbent. White blossoms. Downing's account of this fruit does not come up to the valuable wild variety in Maine.

2. LOW BUSH, (*Rubus canadensis.*) Small; roundish or irregular; black or reddish-black; rather tart, but brisk, pleasant flavor.

*High Bush.*

## HE . CRANBERRY, *(Oxycoccus macrocarpus.)*

A great deal has been written on the cultivation of the cranberry, and mostly without system or science, and if written from practice, it is from few and limited experiments. The cranberry grows wild in marshes, meadows, and around the ponds in N. England, and it is common in Michigan and other parts of the West. In some cases, it has been found growing spontaneously on high land, which has led to various
ents with this plant on common tillage, where it
uperior fruit, of extra size, and is more exempt from
destructive on low lands, where the thermometer, on
ight, is 6 or 7 degrees lower than on high land.

As this fruit becomes better known, and the quan-
reases, the demand increases also. So little was it
some years ago, that when a gentleman of Boston
a distant friend a barrel of cranberries, he acknowl-
he receipt, but was sorry that the fruit had spoiled by
on the way. This is one of the finest of all fruits
es and tarts, it is also good for jellies, &c.; it makes
g drink very useful in fevers and inflammatory com-
By partially drying, it may be kept through the
It is also kept in good condition a long time in
and in this way it is exported to distant parts of the

URE ON WET LANDS. Nearly all the cranberries of
eous production are found on low, wet lands, that are

flooded a part of the season. Many and various experiments have been made to improve the natural cranberry meadows. The most successful management is by applying sand as a dressing, and that from the sea-shore is best. And it may be inferred that salt is useful, from the cranberry growing on salt marshes, which we have noticed in several instances in Maine. One writer on this subject says that the cranberry grows well in sand and water. Prepare a bog meadow for cranberries by ploughing, if convenient, and applying about two inches of sand to the surface, and set the vines in small sods, in rows 2 feet apart, and 12 to 15 inches in the rows, and they will soon spread over the land, and yield a full crop.

It has often been remarked that the vines will oust the grass and weeds; but Lieut. Gov. Reed informed us that he planted the cranberry on wet land, and for a few years it had been expensive keeping down the weeds and grass. They must be kept down the first year, at least.

We have observed around a mill-pond very fine cranberries, on as dry, as poor, and porous a soil as we ever saw; but a friend remarked that, if planted, they would not flourish any higher up the banks than the water flowed in winter. Cranberries on wet lands are greatly improved by flooding; and sometimes the flooding is continued till late in spring, say the first of May or later, in order to retard blossoming, lest the blossoms should be killed by frost. As frosts are very destructive, some have meadows so planned that they can be flooded when a cold night is at hand.

Culture on High Land. Much may doubtless be done to advantage on high land. We have seen the cranberry starting spontaneously on very hard, tolerably moist grass upland, and spreading rapidly, yielding good fruit. We saw fine cranberries of natural growth in a field, close by which the owner was reaping a good crop of barley. We examined the soil, and it was dry and sandy, with a layer of shallow vegetable mould at the surface; yet apparently wet in spring, from its level situation. Where a gravelly knoll had been reduced, for a road, we saw excellent cranberries, of spontaneous production, on dry, hard, and poor soil. On another spot, we saw fine fruit by the roadside, on a very poor, dry, hard soil.

With these cases of good crops under every disadvantage, it would be surprising if cranberries should not grow well ı high land, under good culture. Fowler thinks they will t endure the heat of summer, nor cold of winter, on dry nd. He manures with peat or mud, in winter protects ts and fruit with evergreens, and has fine crops.

ın raising on high land, it would be well to select rather : tillage, and use peat and muck for manure, which is natural soil. We think that a black, moist, sandy am would be best. It would be well to make experiments the use of salt, and other manure. Those plants that turally grow on high land, would, doubtless, be better for is purpose.

Natural meadows yield 1 to 200 bushels to the acre — 100 most common. By cultivation, in some instances, the d has been at the rate of 2 to 300. With a rake, a hand generally gather 15 to 20 bushels in a day. More perience is necessary to show a profit by high land culture, d the most successful mode; also the best mode of improving low lands. By setting thick, in transplanting, good crop will be obtained sooner; and vines transplant- with sods will be the surest.

## THE FIG, (*Ficus carica.*)

The fig is a low, spreading tree, a tive of the warm regions of Asia. is too tender for the cold winters of e North, yet if it be kept in a warm om or cellar during winter, our summers are sufficiently long and warm produce excellent fruit in the open r. In the Middle States the tree eds in-door protection; or the anches may be bent down and covered in earth, in the warmest part of at region. It is hardy south of irginia, and might be cultivated with ofit. In the south of Europe it is raised to a great extent.

*Miniature Leaf.*

fig, apparently, has no blossom, like No Blows in apples, has a development of stamens and pistils in a fleshy bstance, which is the embryo fruit. The fruit is very veet and rich; it is nutritive, laxative, and wholesome.

Soil, Propagation, Culture, &c. The best soil is a ep, only tolerably rich, rather moist, yellow loam, with a dry subsoil. It is propagated by cuttings, or layers. Plant early in a tolerably moist, partially shaded place. In N. England they are raised in pots, or tubs, protected, during winter, in cellars, warm rooms, or green-houses, and set out to bear fruit in the warm season. Mr. S. Tewksbury, of Chelsea, Ms., a very skilful horticulturist, protects his trees in the cellar, set in fine loam, and in spring he plants them out in his garden, where they grow readily, yielding good crops of fine fruit. As the fig has a mat of fine fibrous roots, it is admirably adapted to this mode of culture. Prune sparingly; only cut out dead wood, and shorten in long, straggling branches. Add a little salt to the manure.

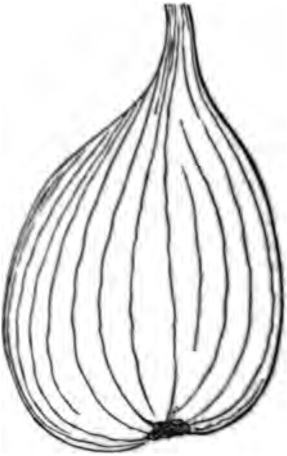
1. **Brown Turkey.** *Large Blue*, *Brown Naples.* Large; oblong or pyriform; dark brown, with blue bloom; flesh red; of a delicious flavor. Hardy, regular, and good bearer, and one of the best for open culture in this country.

2. **Brunswick.** *Black Naples.* Very large; pyriform; oblique apex; brown in the sun; pale greenish-yellow in the shade; stalk short and thick; eye sunk; flesh reddish-brown, pink near the centre; of rich and excellent flavor. Hardy, and adapted to open culture. One of the best.

3. **Black Fig of the Azores.** Medial; irregular pyriform; excellent flavor. Very productive. Allen describes this in the Horticulturist, from which we copy. He raises it under glass, having a tree trained to the back wall, covering ten feet high by 18 wide. It produced 400 specimens at one crop, and two crops in a year.

4. **Black Ischia.** Medial; roundish; flattened at the apex; dark violet, almost black fully ripe; flesh deep red, of a very sweet, luscious flavor. Very fruitful, and tolerably hardy.

5. **Marseilles,** *White Celestial* Small; round-



*Black Fig of the Azores.*

ale yellowish-white; flesh white, rather dry, but ind rich. Not suited to open culture, but excellent ing and raising under glass.

**ERII.** Small; roundish-obovate; pale greenish-yellow; d; flavor delicate and rich. Loudon says it is the fig in Britain.

**LICANT.** R. Chisholm, Beaufort, S. C., figures this ticulturist, and says this and Celestial are the two iltivated there. The Alicant is extremely large. early and abundantly.

## THE ALMOND.

ond is a native of Asia and Africa, resembling n leaf and wood, and they are grown on each ocks. Some botanists suppose them the same thing. ain distinction is in the fruit; the peach having a ick, luscious pulp, which is its fruit, and the almond , leather-like covering; the meat of the stone being it.

. The almond is used in cookery, confectionery, ie, and perfumery. The Sweet is excellent food. itter affords prussic acid, a powerful poison. The l is cultivated extensively in the south of Europe, and d to many parts of the world.

Propagation, Climate, &c. It requires the same d is propagated in the same way as the peach. It well on thrifty plum stocks. Some varieties suc- in the Middle States, but better at the South. N. d and other northern regions are too cold for this ugh some ornamental varieties flourish here.

**NG HARD-SHELL.** Nuts large; very long. A good, variety, adapted to the Middle and Western States, and ly to the South. Large, handsome flowers, very orna- . Last of Sept. and first of Oct.

**OMMON,** *Common Sweet.* Nuts medial size; hard; t flavor, but not so fine as the preceding; bears Hardy, adapted to the Middle Region of the U. S. and South.

**OFT-SHELL SWEET,** *Ladies' Thin Shell.* The best . It suceeeds in the Middle and Western States in le situations only; well adapted to the South. Early.

The blossoms and leaves appear together. Fruit large, very long-oval. Shell tender. Meat sweet and fine.

4. THE BITTER. Fruit large; bitter. The tree is productive; leaves long, dark green; blossoms large.

5. ORNAMENTAL VARIETIES. *The Large Double Flowering* is beautiful, with large whitish flowers. *The Dwarf Double Flowering* is a low and most beautiful shrub, thickly covered in spring with small, double, pink blossoms.

## THE ORANGE, LEMON, LIME, SHADDOCK, AND CITRON.

*Orange Tree.*

These are all of the same genus and habits, though of different species. This family of plants is a native of Asia, but it is cultivated extensively in the south of Europe, and in the West Indies, and moderately in Florida, where it flourishes well, as it would, also, in the other southern sections of the U. S., where the wild orange furnishes a hardy stock. With a slight protection in winter, it will succeed in other parts of the South. The orange may be budded in June, from last year's scions, and a good growth made the same season, or they may be budded in Aug. from new scions.

SOIL, CULTURE, INSECTS, &c. The soil should be a rich, friable loam, and the culture thorough, with frequent stirring the soil. Raise stocks from seed, preferring the native. Graft or bud. The scale insect has been very destructive. It is small, oval, brownish, adhering closely to the bark and under side of the leaves. As a remedy, hang up branches of strong scented herbs, as camomile, mints, &c., in the branches, or apply a strong decoction of these herbs. Whale-oil soap may be effectual, as it is good against most insects. (Page 73.)

1. THE ORANGE is the finest tree, and its fruit is the most esteemed of this family. With its round, golden fruit, and dark green foliage, its appearance is beautiful. The ripe fruit is very delicious, refreshing and wholesome. The green is used for preserves and confectionery. The rind and pulp are used in cookery; the flowers for perfumery.

The most valuable kind is the *Common. Sweet*. The *Maltese* and *Blood Red* are also highly esteemed for their fine flavor. Their flesh is red. The *St. Michael* is of a delicious flavor. *Seville* is bitter and sharp, and used mostly for marmalade. It has large and fragrant flowers. The *Bergamot* has fragrant leaves, flowers and fruit, and produces bergamot essence, so highly valued in perfumery. Others are cultivated as ornaments, or curiosities.

2. THE LEMON yields fruit of a longer form than the orange; pale yellow; fine, pleasant acid; used for lemonade and other cooling drinks. The skin abounds in essential oil, valuable in perfumery, and as a pleasant savor for various dishes. The *Italian Sweet* is good for the dessert.

3. THE LIME is similar to the lemon, but not quite so acid, rich, or pleasant. It is often preserved green.

4. THE SHADDOCK bears very large fruit, weighing 6 or 7 lbs., of splendid appearance, but of little value. Its juice is saccharine and sub-acid. It is a tropical fruit.

5. THE CITRON produces fruit shaped like the lemon, but much larger, yellow, warted, and furrowed. The rind is fragrant, the pulp sub-acid, and used for sweetmeats and preserves.

## THE OLIVE, (*Oleinæ.*)

This is a large shrub, with spreading head, and narrow. bluish-green leaves. A native of the temperate regions of Asia and Africa, but long, and now extensively, cultivated in the south of Europe, where its oil is used for various kinds of cookery; it is also exported largely. The fruit is valuable for pickles. It is of easy culture. The best soil is dry, rocky regions. It is propagated by cuttings, layers, and seeds; also by tumors, which form on the bark of the trunk, and are planted like bulbs. It is tolerably hardy, but not adapted to the North; of remarkable longevity, though coming rather early into bearing. The Southern States are well adapted to its cultivation.

VARIETIES are numerous. The following are the best:— The *Common European*, generally used for main crops. The *Long Leaved* is much cultivated in France. In Spain the *Broad Leaved* is much esteemed. It is very large, and yields an abundance of oil; but it is too strong to be relished abroad.' *Olivier Picholine* is the most valuable for pickles.

The *Weeping* is hardy, and yields an abundance of fine oil; the tree is large; branches pendent; flourishes in most locations. The *American* (*Olea Americana*) is a native of the Southern States; useless for fruit, but may be valuable for stocks to graft on.

## NUTS.

THE CHESTNUT is a noble tree, very common in our forests, also in Europe. The fruit is excellent. The *Spanish* is the largest, but it is rather tender for the North. The *Dwarf Chestnut*, or *Chinquapin*, forms a low tree of small fruit. The chestnut may be easily propagated by seed or grafting. It requires warm, mellow soil.

THE ENGLISH WALNUT, or *Madeira Nut*, is a lofty tree, bearing fine fruit. It is rather tender for the North, but may be cultivated by raising trees from the seed, and if they are killed raise sprouts from them. In this way it has become hardy in this region. Propagated by seeds, and by grafting on other similar kinds.

THE FILBERT is like our hazel nut, but far larger, being improved from the native in Europe. Propagated by seed, layers, and suckers. Cultivate well, and prune closely, and they are of easy production. The English are the best. The following are choice kinds.

1. *Frizzled*. Nut medial size; oval, compressed; husk hairy; shell thick; kernel sweet and good.
2. *Red*. Medial; ovate; thick shell; peculiar and excellent flavor.
3. *Cosford*. Large; oblong; hairy; thin shell; excellent flavor; good bearer.
4. *White*. Medial; ovate; whitish; husks long; excellent flavor.

THE SHELLBARK, or *Hickory Nut*, the BUTTERNUT and BLACK WALNUT, with some variations, which occasionally indicate improvement, are well known in many of our forests and markets.

## POMEGRANATE, (*Pumica granatum*.)

The Pomegranate is a native of Europe and Asia. It flourishes well in this country in the South, and the southern parts of the Middle Region, in favorable locations. The fruit is very beautiful, of the size of a large peach, with a hard skin, of a yellow color, with a red cheek. It is sweet, or sub-acid, and pleasant, of a cooling nature, and used in medicine as a febrifuge. The tree is ornamental, of low growth, and slender branches. It is propagated by seeds, layers, cutting, and grafting. The soil should be rich and warm.

The Varieties are the *Sweet*, the *Sub-acid*, and the *Acid* or *Wild*, with a sharp flavor, making an excellent syrup for fevers and inflammations. There are some ornamental kinds.

*Miniature Branch and Fruit.*

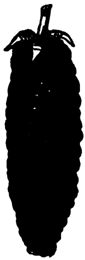
## THE MULBERRY (*Morus*)

Is a tree of low growth and easy culture, on common tillage. The fruit is excellent and wholesome. Propagated by seeds, layers, cuttings, and roots.

1. The Black (*Morus nigra*) originated in Asia, and is rather tender for the North, yet it succeeds here tolerably well. The fruit is large and delicious. The tree is of a low, spreading form.

2. The Red (*Morus rubra*) is a native; the fruit is small and pleasant; but much inferior to the Black, and to the following: —

3. Johnson. The Horticulturist contains the following account of this new native variety, from Kirtland. "Fruit very large; oblong, cylindric; blackish; sub-acid. and of mild and agreeable flavor. Growth of wood strong."



*Black.*

## THE BARBERRY, (*Berberis.*)

The Barberry, or Berberry, grows wild in many parts of the country, and in Europe. It is a prickly shrub, 4, 5, 6, and even 8 or 10 feet high. It grows spontaneously on hard, poor, gravelly soils; also in cool, moist situations, among stones, by walls, and old fences. It is propagated by seeds, suckers, and offsets. The fruit

is used for preserves, jellies, pickles, tarts, &c. Preserves are much improved by using one half sweet apples, or the outer part of a fine water-melon, such as the Red Imperial.

The tannin principle is in the bark; and the bark and wood are used to color yellow. Owing to its rapid growth, durability, and the beauty of the flower, fruit, and whole plant, it is admirably adapted to a protective and ornamental hedge. It grows on land dry or moist, rich or poor. The objection to it as a hedge is its disposition to spread. As to its blasting grain in its vicinity, the question is unsettled; but the weight of evidence shows that it is harmless.

## WHORTLEBERRY AND BLUEBERRY.

**The Black Whortleberry** (*Vaccinium resinosum*) is a small shrub, from 2 to 6 feet high, generally growing in moist soils and swamps, producing small, round, sweet, and excellent fruit, ripening the latter part of summer.

**The Low Blueberry** (*Vaccinium tenellum*) is a small, low bush, 6 to 12 inches high, growing in beds, or bunches, on dry hills and mountains, but most extensively on light pine plains, producing blue berries of similar form and quality to the whortleberry, but rather larger, more tender, and somewhat earlier, ripening at midsummer. Both kinds may be improved by cultivation, and raising seedlings.

## SHEPHERDIA, OR BUFFALO BERRY.

This is an ornamental shrub, 6 to 12 feet high, with beautiful silvery leaves. The fruit is small; roundish; red; excellent for preserves. It is diœcious, that is, has the staminate flowers on one tree, and the pistillate on another, and all the fruit is on the latter. They are set in pairs, from 6 to 10 or 15 feet apart.

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